

<110> Gregory J. Hinkle
Jingdong Liu
Linda T. Parker

<120> Novel Plant Transcribed Regions and Uses Thereof

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<151> 2000-08-29

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Glu Cys Ile Phe Val Val Leu Gln Gln Gly Pro Asp Tyr Met Val
5 10 15

cgc aac gca agg agg tcc atg ctg gag gag ctg gag ggg atg ctg gag 153
Arg Asn Ala Arg Arg Ser Met Leu Glu Leu Glu Gly Met Leu Glu
20 25 30

atc gtg gag cct cag ccg ccg ggg aag ccg agg acg ctt agc cgc agg 201
Ile Val Glu Pro Gln Pro Pro Gly Lys Pro Arg Thr Leu Ser Arg Arg
35 40 45 50

agg ttc gat ctc cca gaa ggc gta gcc atc gaa aag gag acgcgggagg 250
Arg Phe Asp Leu Pro Glu Gly Val Ala Ile Glu Lys Glu
55 60

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tgcggactat agagtttgag tttgtgctgc taccgaaccg tggaccacct taccgggttg 370

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	Met	Ala	Lys	Thr	Pro	Ser	Phe	Ala	Val	Ala	Ala	Val	Ala	Gly	Gly	
1				5					10					15		
cgc	ggg	ccg	gtt	cac	aac	cg	acc	cag	ctc	ctc	ctc	ctc	ctc	ctc	gtg	155
Arg	Gly	Pro	Val	His	Asn	Arg	Thr	Gln	Leu	Leu	Leu	Leu	Leu	Leu	Val	
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gcc	gtc	gca	gcc	tcc	gca	tcc	aca	gca	ggg	ttc	ctc	ctc	cgc	ggt	gcc	203
Ala	Val	Ala	Ala	Ser	Ala	Ser	Thr	Ala	Gly	Phe	Leu	Leu	Arg	Gly	Ala	
				35				40						45		
ctg	cga	gac	cct	tgc	gac	ggc	cgt	ggg	gac	ccc	gcc	gcc	ctc	aac	acc	251
Leu	Arg	Asp	Pro	Cys	Asp	Gly	Arg	Asp	Pro	Ala	Ala	Leu	Asn	Thr		
				50			55							60		
gcc	gtc	gcc	agc	ggg	agt	ccc	ctc	ggg	ttc	atg	agg	tcc	aag	ctc	gtg	299
Ala	Val	Ala	Ser	Gly	Ser	Pro	Leu	Gly	Phe	Met	Arg	Ser	Lys	Leu	Val	
				65			70							75		
ctc	ctc	gtc	tcc	cat	gag	ctc	tcc	ctc	tct	ggt	cca	ctt	tta	ctg		347
Leu	Leu	Val	Ser	His	Glu	Leu	Ser	Leu	Ser	Gly	Gly	Pro	Leu	Leu	Leu	
				80			85							95		
atg	gaa	tta	gca	ttt	ctt	ctg	agg	cat	gtt	ggc	tcg	caa	gtg	gtg	tgg	395
Met	Glu	Leu	Ala	Phe	Leu	Arg	His	Val	Gly	Ser	Gln	Val	Val	Trp		
				100			105							110		
ata	aca	aac	cag	aga	tca	caa	gaa	aca	aat	gat	gtc	aca	tat	agc	ttg	443
Ile	Thr	Asn	Gln	Arg	Ser	Gln	Glu	Thr	Asn	Asp	Val	Thr	Tyr	Ser	Leu	
				115			120							125		
gag	cat	agg	atg	ttg	aac	cat	gga	gtg	cag	gtt	tta	cca	gct	aga	gga	491
Glu	His	Arg	Met	Leu	Asn	His	Gly	Val	Gln	Val	Leu	Pro	Ala	Arg	Gly	
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cag	gag	gca	gtt	gat	att	gct	cta	aaa	gct	gat	ctg	gtt	atc	tta	aac	539
Gln	Glu	Ala	Val	Asp	Ile	Ala	Leu	Lys	Ala	Asp	Leu	Val	Ile	Leu	Asn	
				145			150							155		
act	gct	gtt	gct	ggc	aag	tgg	ctt	gac	cct	gtt	ctg	aaa	gat	cat	gtt	587
Thr	Ala	Val	Ala	Gly	Lys	Trp	Leu	Asp	Pro	Val	Leu	Lys	Asp	His	Val	
				160			165							175		
cct	aaa	gtc	ctt	ccg	aag	att	ttg	tgg	tgg	atc	cat	gaa	atg	cgt	ggg	635
Pro	Lys	Val	Leu	Pro	Lys	Ile	Leu	Trp	Trp	Ile	His	Glu	Met	Arg	Gly	
				180			185							190		

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His Tyr Phe Lys Val Glu Tyr Val Lys His Leu Pro Phe Val Ala Gly	
195 200 205	
gcc atg att gat tct cat aca acg gct gag tat tgg aat agc agg act	731
Ala Met Ile Asp Ser His Thr Thr Ala Glu Tyr Trp Asn Ser Arg Thr	
210 215 220	
agc gat cgc ctg aaa ata cag atg cca caa act tat gtt gtt cac ctg	779
Ser Asp Arg Leu Lys Ile Gln Met Pro Gln Thr Tyr Val Val His Leu	
225 230 235	
ggg aat agt aaa gaa cta atg gaa gtt gct gaa gac aat gtc gca aga	827
Gly Asn Ser Lys Glu Leu Met Glu Val Ala Glu Asp Asn Val Ala Arg	
240 245 250 255	
aga gtc cta cgg gaa cat att cgt gaa tcc ctt gga gta cgg agt gag	875
Arg Val Leu Arg Glu His Ile Arg Glu Ser Leu Gly Val Arg Ser Glu	
260 265 270	
gat ctc ctg ttt gca ata ata aac agt gta tca cga gga aag gga caa	923
Asp Leu Leu Phe Ala Ile Ile Asn Ser Val Ser Arg Gly Lys Gly Gln	
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gac tta ttt ctt caa gca ttt tat cag gct ttg cag ctc atc caa cac	971
Asp Leu Phe Leu Gln Ala Phe Tyr Gln Ala Leu Gln Ile Gln His	
290 295 300	
gag aaa ctt aaa gtg cct aga ata cat gct gta gtt gtg gga agt gat	1019
Glu Lys Leu Lys Val Pro Arg Ile His Ala Val Val Val Gly Ser Asp	
305 310 315	
gtt aat gct cag acc aaa ttt gag act cag tta cgt gac ttt gtg gtg	1067
Val Asn Ala Gln Thr Lys Phe Glu Thr Gln Leu Arg Asp Phe Val Val	
320 325 330 335	
aag aac acg att cat gac cgt gtc cat ttt gtg aac aag aca ttg gca	1115
Lys Asn Thr Ile His Asp Arg Val His Phe Val Asn Lys Thr Leu Ala	
340 345 350	
gtg gcc cct tac ttg gca gca att gat gtg ctt gtt cag aat tct cag	1163
Val Ala Pro Tyr Leu Ala Ala Ile Asp Val Leu Val Gln Asn Ser Gln	
355 360 365	
ggc cgt gga gaa tgc ttt gga agg ata aca att gaa gca atg gca ttc	1211
Gly Arg Gly Glu Cys Phe Gly Arg Ile Thr Ile Glu Ala Met Ala Phe	
370 375 380	
aag ttg cca gta ttg ggc acg gct gct gga ggg acc acg gag atc gtc	1259
Lys Leu Pro Val Leu Gly Thr Ala Ala Gly Gly Thr Thr Glu Ile Val	
385 390 395	
ctg gac ggc tcg act ggc ctt ctg cat cct gct ggg aag gag ggc gtg	1307
Leu Asp Gly Ser Thr Gly Leu Leu His Pro Ala Gly Lys Glu Gly Val	
400 405 410 415	
gcg cct ctt gca aag aac atc gtc aga ctc gca agc cac gcc gag cag	1355

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Ala Pro Leu Ala Lys Asn Ile Val Arg Leu Ala Ser His Ala Glu Gln
 420 425 430
 agg gtc tcc atg ggg gaa aag ggc tat ggc agg gtg aag gaa atg ttc 1403
 Arg Val Ser Met Gly Glu Lys Gly Tyr Gly Arg Val Lys Glu Met Phe
 435 440 445
 atg gag cac cac atg gct gag agg atc gcg gcg gtg ttg aag gat gtc 1451
 Met Glu His His Met Ala Glu Arg Ile Ala Ala Val Leu Lys Asp Val
 450 455 460
 ctg agg aaa tca cag gag cac tcc agg tct tga gctttgccgt gcccatcagc 1504
 Leu Arg Lys Ser Gln Glu His Ser Arg Ser
 465 470
 ttgcgctaac atgttgaact agattttacg ggctacgcct acgtggttca ggctgtaaac 1564
 tgttagattgc actctgttgg tctactttt cacattcatg ttttacctat taggccatgt 1624
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 tat agc agc tca tct ttt gga cta tca ggt gct agt tat ata tca tcc 96
 Tyr Ser Ser Ser Phe Gly Leu Ser Gly Ala Ser Tyr Ile Ser Ser
 20 25 30

 ccc atg agg gaa aca gag cag tca aag act agt ttt gac cag ttt tat 144
 Pro Met Arg Glu Thr Glu Gln Ser Lys Thr Ser Phe Asp Gln Phe Tyr
 35 40 45

 tct aat gcc aat ttc cag ttg tat ttg tcc ttc tgc aac ttt gac aag 192
 Ser Asn Ala Asn Phe Gln Leu Tyr Leu Ser Phe Cys Asn Phe Asp Lys
 50 55 60

 gca atg ttc ttg ggt ttc ttt cat gag cta tcc gag ctt ccc ttt gaa 240
 Ala Met Phe Leu Gly Phe Phe His Glu Leu Ser Glu Leu Pro Phe Glu
 65 70 75 80

 ctg caa aga aaa gct gtc aga gat ttg aag act tct ctg agc ggt gaa 288
 Leu Gln Arg Lys Ala Val Arg Asp Leu Lys Thr Ser Leu Ser Gly Glu

POTENTIAL PROTEINS

85	90	95	
aat gaa att tgg cat tct atg gtc tac aat ggg ttt ttt gaa gca ttc Asn Glu Ile Trp His Ser Met Val Tyr Asn Gly Phe Phe Glu Ala Phe 100	105	110	336
cat gaa ttc ctc aag aat gac agt gga att cac aca ctg caa gct cga His Glu Phe Leu Lys Asn Asp Ser Gly Ile His Thr Leu Gln Ala Arg 115	120	125	384
agg gct ggg att cag ttt ttt ctt gct ttc ctt tct agt ggc agg gct Arg Ala Gly Ile Gln Phe Phe Leu Ala Phe Leu Ser Ser Gly Arg Ala 130	135	140	432
cga att cct tca gtt tgt gaa gat gtg gta ctt ctg att gca tca cta Arg Ile Pro Ser Val Cys Glu Asp Val Val Leu Leu Ile Ala Ser Leu 145	150	155	480
cat gat tcc gag ttc aaa cag gag gct ctt ctg att gta cat gaa ctg His Asp Ser Glu Phe Lys Gln Glu Ala Leu Leu Ile Val His Glu Leu 165	170	175	528
ctt cag gaa cca agc tgt cca aaa tct agt ctc atg gcc tcc att ctt Leu Gln Glu Pro Ser Cys Pro Lys Ser Ser Leu Met Ala Ser Ile Leu 180	185	190	576
tct cct tca gtg ttt gga gct ttg gac agt gga gaa acc aag tgc ctg Ser Pro Ser Val Phe Gly Ala Leu Asp Ser Gly Glu Thr Lys Cys Leu 195	200	205	624
gac ctc gct ctg cag atc atc tgc aag att tca tct gat aat gat ata Asp Leu Ala Leu Gln Ile Ile Cys Lys Ile Ser Ser Asp Asn Asp Ile 210	215	220	672
aaa tct tac ctt tcc gga ata gtg tcg agg tta tct ccg ctc Lys Ser Tyr Leu Leu Ser Ser Gly Ile Val Ser Arg Leu Ser Pro Leu 225	230	235	720
ctt ggt gaa gga aag atg aca gaa tgc tct ttg aag att cta cgg aac Leu Gly Glu Gly Lys Met Thr Glu Cys Ser Leu Lys Ile Leu Arg Asn 245	250	255	768
ttg agt gac gtg aaa gag acc gca ggg ttt ata atc aga aca ggt aat Leu Ser Asp Val Lys Glu Thr Ala Gly Phe Ile Ile Arg Thr Gly Asn 260	265	270	816
tgc gtc agc tcc att tca gat cat ctg gac act gga agc cac agc gaa Cys Val Ser Ser Ile Ser Asp His Leu Asp Thr Gly Ser His Ser Glu 275	280	285	864
cgt gaa cat gcg gtg gtc atc ctt cta ggg gta tgc tcc cac agt cct Arg Glu His Ala Val Val Ile Leu Leu Gly Val Cys Ser His Ser Pro 290	295	300	912
gag gtt tgt tca ctt tcc atg aag gaa ggc gtc atc cca gcc ctt gta Glu Val Cys Ser Leu Ser Met Lys Glu Gly Val Ile Pro Ala Leu Val 305	310	315	960
			320

Zea mays

gac tta tca gtg agt gga acc aag gtg gca agg gat tgc tcg gtc aag	325	330	335	1008	
Asp Leu Ser Val Ser Gly Thr Lys Val Ala Arg Asp Cys Ser Val Lys					
ttg ctt cag ctt ctg agg aac ttc agg cga tgt gac cag ttc agc agt	340	345	350	1056	
Leu Leu Gln Leu Leu Arg Asn Phe Arg Arg Cys Asp Gln Phe Ser Ser					
tca tgc tca aga gag ctt gct gtc gat cat gtt tca gag aac act cgc	355	360	365	1104	
Ser Cys Ser Arg Glu Leu Ala Val Asp His Val Ser Glu Asn Thr Arg					
aat ggt tca att tgc atg cag ccg ata tca aag tca gcc cggttat att	370	375	380	1152	
Asn Gly Ser Ile Cys Met Gln Pro Ile Ser Lys Ser Ala Arg Tyr Ile					
tca aga aag ctc aac ctt ttc tca aaa cct cggtcgaccctgaccctg gct	385	390	395	400	1200
Ser Arg Lys Leu Asn Leu Phe Ser Lys Pro Arg Ser Leu Thr Leu Ala					
tga gaaatggaag gggtcgggttg gatcgagcccc tattccgcag cgctaactgc				1253	
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Met Gly Ile Glu Ser Gln Val Thr Pro Pro Ala Glu Glu	1	5	10		
cct tct cca ccc acc gtg gag ccg tcg ccg tcg tct cct gcc ccg cct				218	
Pro Ser Pro Pro Thr Val Glu Pro Ser Pro Ser Pro Ala Pro Pro	15	20	25	30	
ccg tct tcc ctt gag gcg att gct gca gaa gcc atg tca ttt gat gag				266	
Pro Ser Ser Leu Glu Ala Ile Ala Ala Glu Ala Met Ser Phe Asp Glu	35	40	45		

Zea mays

gat gac act gag gag tca atc gat gtg aag gta cag aaa gct ctg gac	314
Asp Asp Thr Glu Glu Ser Ile Asp Val Lys Val Gln Lys Ala Leu Asp	
50 55 60	
tgt cca tgt gtt gct gat ttg aaa aat ggt cct tgt gga ggt caa ttc	362
Cys Pro Cys Val Ala Asp Leu Lys Asn Gly Pro Cys Gly Gly Gln Phe	
65 70 75	
gtc gat gca ttt tcc tgc ttt ctc agg agc aga gaa gaa gag aag gga	410
Val Asp Ala Phe Ser Cys Phe Leu Arg Ser Arg Glu Glu Glu Lys Gly	
80 85 90	
tca gat tgc gtg aaa ccc ttc atc aca ttg cag gac tgc atc aaa gca	458
Ser Asp Cys Val Lys Pro Phe Ile Thr Leu Gln Asp Cys Ile Lys Ala	
95 100 105 110	
aat cca gag gca ttc tct aag gag att ctg gag gaa gag gaa aat gat	506
Asn Pro Glu Ala Phe Ser Lys Glu Ile Leu Glu Glu Glu Asn Asp	
115 120 125	
gag gag gca gat aag tcc aac ctg aaa gtt aga gct cca tca tgg tcc	554
Glu Glu Ala Asp Lys Ser Asn Leu Lys Val Arg Ala Pro Ser Trp Ser	
130 135 140	
aga gaa tcc aaa cct aag gtt tga gattgcttgg tatttaactga tagtgatatt	608
Arg Glu Ser Lys Pro Lys Val	
145	
catccagtgt gcagactcac cttattcaac tataaggct tggcgcttt cctctcaatc	668
catgtgatct caatccatgt ggattgggtg ggattggatg agtttaatc ctgaacaagt	728
caaaaatccctt catatttttt ctaatctcat ccaatccaca tgggacagga ataaccgaac	788
aaggccctaag tttgccagta gtagactgat ttcagagagc gaggtatcat aaattgatta	848
acagaaaatac ccataatttg tgtataagaa atgcttcatg gtatccacaa ttttagaatg	908
tacatgtcat ttcaagtatc aatcgagaac ttagtactt gtaattcgat tcctagatac	968
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ggc aca tcc tcc cca ttc cct gac cct gag atg cag gct tct tca cgc 97
  Gly Thr Ser Ser Pro Phe Pro Asp Pro Glu Met Gln Ala Ser Ser Arg
  20          25          30

agc gct tta cgc ttg ttc cca gtt cgt gag ccc cct aag ata ttg gat 145
  Ser Ala Leu Arg Leu Phe Pro Val Arg Glu Pro Pro Lys Ile Leu Asp
  1           5           10          15

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35	40	45			
ggc gag ggc gtt gcg aca cag aag ttg ata cct cgc cat atg cgc aac Gly Glu Gly Val Ala Thr Gln Lys Leu Ile Pro Arg His Met Arg Asn	50	55	60	193	
ggt ggg tcc ctc ttg gat ggc cag atc tca gca gct gta cca gtt gtg Gly Gly Ser Leu Leu Asp Gly Gln Ile Ser Ala Ala Val Pro Val Val	65	70	75	80	241
gac ttc tct gcc cga ctt caa ccc aac gag cac gca atg gat cac cgg Asp Phe Ser Ala Arg Leu Gln Pro Asn Glu His Ala Met Asp His Arg	85	90	95	289	
gtg tca ttc gag ttg acc gtc gaa gat gtc gcg cgc tgc ctt gag aag Val Ser Phe Glu Leu Thr Val Glu Asp Val Ala Arg Cys Leu Glu Lys	100	105	110	337	
aag act gca atc tcc ggg gat tct ggc acg gca tca ttc cac ctt gca Lys Thr Ala Ile Ser Gly Asp Ser Gly Thr Ala Ser Phe His Leu Ala	115	120	125	385	
ccg acc ggc agc ggc gac cac cac aga gaa tcc aac gag gca agg gca Pro Thr Gly Ser Gly Asp His His Arg Glu Ser Asn Glu Ala Arg Ala	130	135	140	433	
ggg ctc tac gtc gac gaa tca tac cat gac ttg ccc gag aaa gcg agg Gly Leu Tyr Val Asp Glu Ser Tyr His Asp Leu Pro Glu Lys Ala Arg	145	150	155	160	481
cgg tcc ctg tcc ctg cgc ctg gcc aaa gag ttc aat ttc aac aac gtc Arg Ser Leu Ser Leu Arg Leu Ala Lys Glu Phe Asn Phe Asn Asn Val	165	170	175	529	
gac gtc ggt agc gtg gag ccg agc gtg gga tcc gac tgg tgg gcg aac Asp Val Gly Ser Val Glu Pro Ser Val Gly Ser Asp Trp Trp Ala Asn	180	185	190	577	
gag aaa gtc gcc ggg atg aca act gag cca aaa aag aac tgg tct ttc Glu Lys Val Ala Gly Met Thr Thr Glu Pro Lys Lys Asn Trp Ser Phe	195	200	205	625	
cac ccg gtg gtg cag cct ggg gtc agc taa cctttgcact gaccataatg His Pro Val Val Gln Pro Gly Val Ser	210	215		675	
atcttataaca gggatgaagg aattagcttc ttctgcttct gcttctgctt cagtggtcga				735	
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Zea mays

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tcttttctc cgccca aat ggt aaa gct aaa aag gga cca aag ttt gct	171
Met Gly Lys Ala Lys Lys Gly Pro Lys Phe Ala	
1 5 10	
gtt atg aag aag att gtc act tcc aaa gca atc aaa agc tac aaa gaa	219
Val Met Lys Lys Ile Val Thr Ser Lys Ala Ile Lys Ser Tyr Lys Glu	
15 20 25	
gag gtt ttg aac cca gaa aag aag aat ctt atg aag gaa aag tta ccc	267
Glu Val Leu Asn Pro Glu Lys Lys Asn Leu Met Lys Glu Lys Leu Pro	
30 35 40	
aga aat gtt cca act cat tct tca gcg ctt ttc ttt caa tac aac act	315
Arg Asn Val Pro Thr His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr	
45 50 55	
gca ctg gga ccc cct tat cgt gtt ttg gtg gac acc aac ttc atc aat	363
Ala Leu Gly Pro Pro Tyr Arg Val Leu Val Asp Thr Asn Phe Ile Asn	
60 65 70 75	
ttc tcg atc caa aat aaa ttg gat ctg gag aaa ggg atg atg gac tgc	411
Phe Ser Ile Gln Asn Lys Leu Asp Leu Glu Lys Gly Met Met Asp Cys	
80 85 90	
tta tat gca aaa tgc acc cct tgt att acg gac tgt gtg atg gca gaa	459
Leu Tyr Ala Lys Cys Thr Pro Cys Ile Thr Asp Cys Val Met Ala Glu	
95 100 105	
ctc gag aag tta ggc caa aaa tat cgt gta gct cta agg att gcc aag	507
Leu Glu Lys Leu Gly Gln Lys Tyr Arg Val Ala Leu Arg Ile Ala Lys	
110 115 120	
gat cct cga ttt gag aga ata cta tgt act cat aaa ggg acc tat gct	555
Asp Pro Arg Phe Glu Arg Ile Leu Cys Thr His Lys Gly Thr Tyr Ala	
125 130 135	
gat gac tgc ctt gtt gag aga gtt act cag cac aag tgc tac att gtt	603
Asp Asp Cys Leu Val Glu Arg Val Thr Gln His Lys Cys Tyr Ile Val	

RECORDED BY: [REDACTED]

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Ala Thr Cys Asp Arg Asp Leu Lys Arg Arg Ile Arg Lys Ile Pro Gly				
160	165	170		
gtt cca ata atg tac atc acc aaa cgc aag tac tcg att gag cga ttg				699
Val Pro Ile Met Tyr Ile Thr Lys Arg Lys Tyr Ser Ile Glu Arg Leu				
175	180	185		
cct gaa gca aca att ggt gga gct cca aga att tga tgcataaaa				745
Pro Glu Ala Thr Ile Gly Gly Ala Pro Arg Ile				
190	195			
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atgaaatcct gctacagtac ctagcatatt cggcttttg ctggctggc tgaattctat				865
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aacaagagcca caccacacc atg agc gtc atc gac att ctc acc aga gtt gat				172
Met Ser Val Ile Asp Ile Leu Thr Arg Val Asp				
1	5	10		
tcc att tgc aaa aag tac gac aaa tac gac gtc caa agc caa agg gac				220
Ser Ile Cys Lys Lys Tyr Asp Lys Tyr Asp Val Gln Ser Gln Arg Asp				
15	20	25		
tcc aat ctc tcc tcc gac gat gca ttc gcc aaa ctc tac gcc tcc gtc				268
Ser Asn Leu Ser Ser Asp Asp Ala Phe Ala Lys Leu Tyr Ala Ser Val				
30	35	40		
gac gcc gac att gag gcc tta ctt cag aaa gca gat acc gct tcc aag				316

Asp Ala Asp Ile Glu Ala Leu Leu Gln Lys Ala Asp Thr Ala Ser Lys			
45	50	55	
gag aaa agt aag gca tcc act gtg gcg atc aat gcc gag att cgt cga			364
Glu Lys Ser Lys Ala Ser Thr Val Ala Ile Asn Ala Glu Ile Arg Arg			
60	65	70	75
acc aag gct agg ttg ttg gag gag gtt ccc aag ttg cag aaa ttg gct			412
Thr Lys Ala Arg Leu Leu Glu Val Pro Lys Leu Gln Lys Leu Ala			
80	85	90	
atg aaa aag gta aag ggg ctt tca tca caa gaa ttt gct gcc cgt aat			460
Met Lys Lys Val Lys Gly Leu Ser Ser Gln Glu Phe Ala Ala Arg Asn			
95	100	105	
gat ttg gct ctt gca ttg ccg gat agg att caa gct atc cca gat ggg			508
Asp Leu Ala Leu Ala Pro Asp Arg Ile Gln Ala Ile Pro Asp Gly			
110	115	120	
acc cct gca gca tcc aaa caa act gga agt tgg gca gct tca gcc tca			556
Thr Pro Ala Ala Ser Lys Gln Thr Gly Ser Trp Ala Ala Ser Ala Ser			
125	130	135	
cgt cct gga att aaa ttt gat aca gat ggg aaa ttc gat gat gaa tac			604
Arg Pro Gly Ile Lys Phe Asp Thr Asp Gly Lys Phe Asp Asp Glu Tyr			
140	145	150	155
ttc caa caa act gaa gaa tca agt gga ttc agg aaa gag tac gaa atg			652
Phe Gln Gln Thr Glu Glu Ser Ser Gly Phe Arg Lys Glu Tyr Glu Met			
160	165	170	
cgt aaa atg aaa cag gat caa ggt ttg gat atg atc gca gaa gga ttg			700
Arg Lys Met Lys Gln Asp Gln Gly Leu Asp Met Ile Ala Glu Gly Leu			
175	180	185	
gat act ttg aaa aac atg gca cat gat atg aat gag gaa ctg gat aga			748
Asp Thr Leu Lys Asn Met Ala His Asp Met Asn Glu Glu Leu Asp Arg			
190	195	200	
caa gtt cca ctg atg gac gag att gat act aag gtg gac agg gca tct			796
Gln Val Pro Leu Met Asp Glu Ile Asp Thr Lys Val Asp Arg Ala Ser			
205	210	215	
tct gac ctt aaa aat acc aat gtt aga ctt aga gat aca gtg aac cag			844
Ser Asp Leu Lys Asn Thr Asn Val Arg Leu Arg Asp Thr Val Asn Gln			
220	225	230	235
ctt cga tcc agt cga aac ttt tgt att gat att gtt ttg ttg att ata			892
Leu Arg Ser Ser Arg Asn Phe Cys Ile Asp Ile Val Leu Leu Ile Ile			
240	245	250	
att ttg gga att gct gct tat ttg tac aac gtg cta aag aaa tga			937
Ile Leu Gly Ile Ala Ala Tyr Leu Tyr Asn Val Leu Lys Lys			
255	260	265	
tacggcatag aagaccatta gatcaatttg tatggcttat cagtatttct tgcattttct			997

tggtatatc gtgggtgtac tcgtgtctgc ttcttttaa aacaatattt ttggacttgt 1057
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 1 5 10 15

tat ggt gtg ttg ctg cag tta cca gct cct cag ctt gag aat gcc ttg 97
 Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
 20 25 30

agt aag aac ccg aca ctg aag acg ccc ttg gct gag cat gcc gag cag 145
 Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
 35 40 45

cca aat att cgg tcg aca ctt cca agg tct acc ttg gtg gtt ctg ggt 193
 Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
 50 55 60

ctt gct gaa gat caa cca cag caa cca gca gta aca cag gtg cag agc 241
 Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
 65 70 75 80

agc caa aac cag gct gcg gaa acc agt agc tct gct gat acg gct 289
 Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ala Ala Asp Thr Ala
 85 90 95

aca gaa gta act cag gaa tct tct ggt gct agc taa catctttat 335
 Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105

gccgaaatgg gctaatgctt gcagggttta tgccatctat cattttcatc tctggagtga 395

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Ile Arg Leu Glu Phe Glu Ser Leu Glu Ile Glu Met Ala Asn Glu Asn
1 5 10 15
gaa ccc gcg aag ctg ctg ttg cca tac ctt caa cgc gcc gat gaa ttg 96
Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu
20 25 30
caa aag cat gaa cca ctc gtc gct tat tac tgt cga tta tat gca atg 144
Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met
35 40 45
gaa cgg ggg ttg aag att ccg caa agt gag cgc acg aag acc act aat 192
Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn
50 55 60
gct ctt ctg gtt tcg ctc atg aag cag ctt gaa aag gat aaa aag tca 240
Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser
65 70 75 80
atc cag ttg ggg cct gaa gac aat tta tat ctc gag gga ttt gct ttg 288
Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu
85 90 95
aat gtg ttt gga aaa gca gac aag caa gat cgt gct gga aga gca gat 336
Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp
100 105 110
ttg act aca gca aaa aca ttt tat gct gcc agt atc ttt ttt gag att 384
Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile
115 120 125
ctt aat caa ttt gga gca gtt cag cct gat ctg gag cag aaa caa aaa 432
Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys
130 135 140
tat gct gtg tgg aaa gca gct gaa ata aga aaa gct ttg aaa gaa gga 480
Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly
145 150 155 160
agg aag ccc aca gct ggc ccc cct gat ggt gat gag gat ctg tca gtt 528
Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val

ESTERASE B

165	170	175	
cct ttg agt tct tca agt gat aga tat gac ctt ggg act act gaa aat Pro Leu Ser Ser Ser Asp Arg Tyr Asp Leu Gly Thr Thr Glu Asn 180	185	190	576
act gtt tcc agt cct gga cca gaa tct gat tca tca aga agt tat cat Thr Val Ser Ser Pro Gly Pro Glu Ser Asp Ser Ser Arg Ser Tyr His 195	200	205	624
aac cct gct aac tac cag aat ctg cca agc att cat cct gct gct cct Asn Pro Ala Asn Tyr Gln Asn Leu Pro Ser Ile His Pro Ala Ala Pro 210	215	220	672
aaa ttt cat gat act gtt aac gac caa cat tct gct aat att cca tca Lys Phe His Asp Thr Val Asn Asp Gln His Ser Ala Asn Ile Pro Ser 225	230	235	720
tct atg cca ttt cat gat aga gta gat aat aac aag cat tct tcc gtt Ser Met Pro Phe His Asp Arg Val Asp Asn Asn Lys His Ser Ser Val 245	250	255	768
gtt tct cca tca tct cac tct ttc aca cct gga gtt tat cct tcc caa Val Ser Pro Ser Ser His Ser Phe Thr Pro Gly Val Tyr Pro Ser Gln 260	265	270	816
gac tac cat tct cct cca cct tcc cga gac tat cat tct cct cca cca Asp Tyr His Ser Pro Pro Pro Ser Arg Asp Tyr His Ser Pro Pro Pro 275	280	285	864
tcc caa gac tat cat tct cct cca tcg tcc caa gat tat cat cct cct Ser Gln Asp Tyr His Ser Pro Pro Ser Ser Gln Asp Tyr His Pro Pro 290	295	300	912
cca cca tcc caa gat tac cat cct cca ccg tcc caa gat tac cat cct Pro Pro Ser Gln Asp Tyr His Pro Pro Pro Ser Gln Asp Tyr His Pro 305	310	315	960
cca cct gct aga tct gaa ggt tct tat tct gag ctc tac aat cat cag Pro Pro Ala Arg Ser Glu Gly Ser Tyr Ser Glu Leu Tyr Asn His Gln 325	330	335	1008
caa tac tca cca gag aat tca cag cat tta ggt cct aac tac cct tct Gln Tyr Ser Pro Glu Asn Ser Gln His Leu Gly Pro Asn Tyr Pro Ser 340	345	350	1056
cat gaa act tcc tct tat tct tat ccc cat ttt cag tct tat cca agt His Glu Thr Ser Ser Tyr Ser Tyr Pro His Phe Gln Ser Tyr Pro Ser 355	360	365	1104
ttt aca gaa agc agc ctt cca tca gtc cca tca aac tat act cat tat Phe Thr Glu Ser Ser Leu Pro Ser Val Pro Ser Asn Tyr Thr His Tyr 370	375	380	1152
caa gga tca gat gtt tca tat tct tcc cag tcg gct ccg cta act aca Gln Gly Ser Asp Val Ser Tyr Ser Ser Gln Ser Ala Pro Leu Thr Thr 385	390	395	1200
		400	

aac cat tca tca agt gct caa cac agt agc aga aat gaa act gtg gaa	1248																																																																																												
Asn His Ser Ser Ser Ala Gln His Ser Ser Arg Asn Glu Thr Val Glu																																																																																													
405	410	415		cct aag cca aca act act cag gca tac cag tac gac agt aac tac cag	1296	Pro Lys Pro Thr Thr Gln Ala Tyr Gln Tyr Asp Ser Asn Tyr Gln		420	425	430		cca gca cct gaa aaa ata gca gag gca cac aag gct gca aga ttt gcc	1344	Pro Ala Pro Glu Lys Ile Ala Glu Ala His Lys Ala Ala Arg Phe Ala		435	440	445		gtt ggg gca ctg gca ttt gat gat gtc tca gtt gca gta gac ttc ttg	1392	Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu		450	455	460		aag aaa tca ctt gag ttg ctg aca aat cca tca gct ggc cag taa	1437	Lys Lys Ser Leu Glu Leu Leu Thr Asn Pro Ser Ala Gly Gln		465	470	475		aattttttgt aaatcgaaat gtggatttcg gtgggtttt ctacctttta tttgcattgtc	1497	ttgttttgtt tattaggtac atcatgcatt taaagtgtga aaaaatttgg gaagatgaac	1557	ggaaattata aaatctgctg ggatctgcaa tctttcttgt tt	1599	 		<210> 11		<211> 1807		<212> DNA		<213> Zea mays		 		<220>		<221> CDS		<222> (248) .. (679)		 		<400> 11		 		ccacgcgtcc gtataaatca gcccccttcc tccacggtcg cgtttacagg gcgttagagag	60	agagagagag agagagagcg cgagcgagcg aagagggcgt gagagaggag ggaggccaag	120	ccgtacgcgt cgtctcctgc tgtttctccc catcccttc ctgcctcggc ttgcaccc	180	aaccttactt aaagctctga cctcaaactg aaagggacct gcgaagagtt tttttgcgg	240	cagtaca atg gag gta ttt ggc aaa tct gtg att gct gag ccc agc aat	289	Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn		1 5 10		 		gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt	337	Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser		15 20 25 30		 		cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg	385	His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met	
415																																																																																													
cct aag cca aca act act cag gca tac cag tac gac agt aac tac cag	1296																																																																																												
Pro Lys Pro Thr Thr Gln Ala Tyr Gln Tyr Asp Ser Asn Tyr Gln																																																																																													
420	425	430		cca gca cct gaa aaa ata gca gag gca cac aag gct gca aga ttt gcc	1344	Pro Ala Pro Glu Lys Ile Ala Glu Ala His Lys Ala Ala Arg Phe Ala		435	440	445		gtt ggg gca ctg gca ttt gat gat gtc tca gtt gca gta gac ttc ttg	1392	Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu		450	455	460		aag aaa tca ctt gag ttg ctg aca aat cca tca gct ggc cag taa	1437	Lys Lys Ser Leu Glu Leu Leu Thr Asn Pro Ser Ala Gly Gln		465	470	475		aattttttgt aaatcgaaat gtggatttcg gtgggtttt ctacctttta tttgcattgtc	1497	ttgttttgtt tattaggtac atcatgcatt taaagtgtga aaaaatttgg gaagatgaac	1557	ggaaattata aaatctgctg ggatctgcaa tctttcttgt tt	1599	 		<210> 11		<211> 1807		<212> DNA		<213> Zea mays		 		<220>		<221> CDS		<222> (248) .. (679)		 		<400> 11		 		ccacgcgtcc gtataaatca gcccccttcc tccacggtcg cgtttacagg gcgttagagag	60	agagagagag agagagagcg cgagcgagcg aagagggcgt gagagaggag ggaggccaag	120	ccgtacgcgt cgtctcctgc tgtttctccc catcccttc ctgcctcggc ttgcaccc	180	aaccttactt aaagctctga cctcaaactg aaagggacct gcgaagagtt tttttgcgg	240	cagtaca atg gag gta ttt ggc aaa tct gtg att gct gag ccc agc aat	289	Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn		1 5 10		 		gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt	337	Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser		15 20 25 30		 		cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg	385	His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met									
430																																																																																													
cca gca cct gaa aaa ata gca gag gca cac aag gct gca aga ttt gcc	1344																																																																																												
Pro Ala Pro Glu Lys Ile Ala Glu Ala His Lys Ala Ala Arg Phe Ala																																																																																													
435	440	445		gtt ggg gca ctg gca ttt gat gat gtc tca gtt gca gta gac ttc ttg	1392	Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu		450	455	460		aag aaa tca ctt gag ttg ctg aca aat cca tca gct ggc cag taa	1437	Lys Lys Ser Leu Glu Leu Leu Thr Asn Pro Ser Ala Gly Gln		465	470	475		aattttttgt aaatcgaaat gtggatttcg gtgggtttt ctacctttta tttgcattgtc	1497	ttgttttgtt tattaggtac atcatgcatt taaagtgtga aaaaatttgg gaagatgaac	1557	ggaaattata aaatctgctg ggatctgcaa tctttcttgt tt	1599	 		<210> 11		<211> 1807		<212> DNA		<213> Zea mays		 		<220>		<221> CDS		<222> (248) .. (679)		 		<400> 11		 		ccacgcgtcc gtataaatca gcccccttcc tccacggtcg cgtttacagg gcgttagagag	60	agagagagag agagagagcg cgagcgagcg aagagggcgt gagagaggag ggaggccaag	120	ccgtacgcgt cgtctcctgc tgtttctccc catcccttc ctgcctcggc ttgcaccc	180	aaccttactt aaagctctga cctcaaactg aaagggacct gcgaagagtt tttttgcgg	240	cagtaca atg gag gta ttt ggc aaa tct gtg att gct gag ccc agc aat	289	Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn		1 5 10		 		gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt	337	Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser		15 20 25 30		 		cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg	385	His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met																	
445																																																																																													
gtt ggg gca ctg gca ttt gat gat gtc tca gtt gca gta gac ttc ttg	1392																																																																																												
Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu																																																																																													
450	455	460		aag aaa tca ctt gag ttg ctg aca aat cca tca gct ggc cag taa	1437	Lys Lys Ser Leu Glu Leu Leu Thr Asn Pro Ser Ala Gly Gln		465	470	475		aattttttgt aaatcgaaat gtggatttcg gtgggtttt ctacctttta tttgcattgtc	1497	ttgttttgtt tattaggtac atcatgcatt taaagtgtga aaaaatttgg gaagatgaac	1557	ggaaattata aaatctgctg ggatctgcaa tctttcttgt tt	1599	 		<210> 11		<211> 1807		<212> DNA		<213> Zea mays		 		<220>		<221> CDS		<222> (248) .. (679)		 		<400> 11		 		ccacgcgtcc gtataaatca gcccccttcc tccacggtcg cgtttacagg gcgttagagag	60	agagagagag agagagagcg cgagcgagcg aagagggcgt gagagaggag ggaggccaag	120	ccgtacgcgt cgtctcctgc tgtttctccc catcccttc ctgcctcggc ttgcaccc	180	aaccttactt aaagctctga cctcaaactg aaagggacct gcgaagagtt tttttgcgg	240	cagtaca atg gag gta ttt ggc aaa tct gtg att gct gag ccc agc aat	289	Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn		1 5 10		 		gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt	337	Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser		15 20 25 30		 		cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg	385	His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met																									
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475																																																																																													
aattttttgt aaatcgaaat gtggatttcg gtgggtttt ctacctttta tttgcattgtc	1497																																																																																												
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Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn																																																																																													
1 5 10																																																																																													
gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt	337																																																																																												
Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser																																																																																													
15 20 25 30																																																																																													
cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg	385																																																																																												
His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met																																																																																													

35	40	45		
tac cgt tgc aaa ctg act gaa acc act cac atc tgt gac aaa aac tgt Tyr Arg Cys Lys Leu Thr Glu Thr His Ile Cys Asp Lys Asn Cys	50	55	60	433
aac cag agg att cta tat gac aac cat aac tcg ctc tgc cga gtg agt Asn Gln Arg Ile Leu Tyr Asp Asn His Asn Ser Leu Cys Arg Val Ser	65	70	75	481
ggg cag ctt ttt ccg ctc tct cca ctg gag cag caa gca gtg agg ggc Gly Gln Leu Phe Pro Leu Ser Pro Leu Glu Gln Gln Ala Val Arg Gly	80	85	90	529
atc cgc agg aag cat gaa gtg gac agc agt gaa ggt tgc tgc ttt aag Ile Arg Arg Lys His Glu Val Asp Ser Ser Glu Gly Cys Cys Phe Lys	95	100	105	577
cgc agg cgc ggc gca cag ctg cat cct tcc ccc ttc gag agg tcc tac Arg Arg Arg Gly Ala Gln Leu His Pro Ser Pro Phe Glu Arg Ser Tyr	115	120	125	625
tct gct gtg tat cca atc ccg agc cag gtt gga gat ggc atg gac atg Ser Ala Val Tyr Pro Ile Pro Ser Gln Val Gly Asp Gly Met Asp Met	130	135	140	673
agc tag agcta atgag acttcctttt ctgcggccag ccacctaatt tcgttctgtc Ser				729
taccctttt ccctacgatt acaagatgga actataagag ctcccttctt ttttagactta				789
tatgagactc cttagatgca ccgaataaaat gttcatgttag tatctattct gtttcatggg				849
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 Met Lys Val Leu Val Leu Ala Val Leu Ala Leu
 1 5 10

gtc gcc gcc tcc gcc gct ggt cag ggc gag gag ggg ggc ggg ccg 278
 Val Ala Ala Ala Ser Ala Ala Gly Gln Gly Glu Gly Gly Pro
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 Pro Leu Pro Phe Ala Leu Gly Ala Ala Pro Ala Gly Cys Asp Val Ala
 30 35 40

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 Gln Gly Glu Trp Val Arg Asp Asp Ala Arg Pro Trp Tyr Gln Glu
 45 50 55

tgg gag tgc ccc tac atc cag ccg cag ctg acg tgc cag gcg cac ggc 422
 Trp Glu Cys Pro Tyr Ile Gln Pro Gln Leu Thr Cys Gln Ala His Gly
 60 65 70 75

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 Arg Pro Asp Lys Ala Tyr Gln Ser Trp Arg Trp Gln Pro Arg Gly Cys
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tcg ctg ccc agc ttc aac gcg acg ctg atg ctg gag atg ctg cgg ggg 518
 Ser Leu Pro Ser Phe Asn Ala Thr Leu Met Leu Glu Met Leu Arg Gly
 95 100 105

aag cgg atg ctg ttc gtg ggt gac tcg ctg aac cgg ggg cag tac gtg 566
 Lys Arg Met Leu Phe Val Gly Asp Ser Leu Asn Arg Gly Gln Tyr Val
 110 115 120

Nucleotide

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Ser Leu Leu Cys Leu Leu His Arg Ala Ile Pro Asp Gly Ala Lys Ser	
125 130 135	
ttc gag acg gtg gac tcg ctg agc gtc ttc cgg gcg aag aac tac gac	662
Phe Glu Thr Val Asp Ser Leu Ser Val Phe Arg Ala Lys Asn Tyr Asp	
140 145 150 155	
gcc acc atc gag ttc tac tgg gcg ccg atg ctg gcc gag tcc aac tcc	710
Ala Thr Ile Glu Phe Tyr Trp Ala Pro Met Leu Ala Glu Ser Asn Ser	
160 165 170	
gac gac gcc gtg gtg cac tcc gcc gac cgc ctc atc cgc ggc gcg	758
Asp Asp Ala Val Val His Ser Ala Asp Asp Arg Leu Ile Arg Gly Ala	
175 180 185	
ccc atg gac agg cac tac agc ttc tgg aag ggc gcc gac gtc ctc gtc	806
Pro Met Asp Arg His Tyr Ser Phe Trp Lys Gly Ala Asp Val Leu Val	
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Phe Asn Ser Tyr Leu Trp Trp Val Ala Gly Asp Lys Ile Gln Ile Leu	
205 210 215	
agg ggc gcc gac aac gac ccg agc aag gac atc gtg gag atg aag tcg	902
Arg Gly Ala Asp Asn Asp Pro Ser Lys Asp Ile Val Glu Met Lys Ser	
220 225 230 235	
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Glu Glu Ala Tyr Arg Leu Val Leu His Gln Val Val Arg Trp Leu Glu	
240 245 250	
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Arg Asn Val Asp Pro Gly Lys Ser Arg Val Phe Phe Val Thr Ala Ser	
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Pro Thr His Thr Asp Gly Arg Ala Trp Gly Asp Asp Ala Glu Gly	
270 275 280	
agc agc aac tgc tac aac cag acg tcg ccg atc agc gcc gcc tcg tcc	1094
Ser Ser Asn Cys Tyr Asn Gln Thr Ser Pro Ile Ser Ala Ala Ser Ser	
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Tyr Arg Gly Gly Thr Ser Arg Glu Met Leu Arg Ala Thr Glu Glu Val	
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Leu Ala Thr Ser Arg Val Pro Val Gly Leu Val Asn Ile Thr Arg Leu	
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tcc gag tac cgc cgg gac gcg cac acg cag acc tac aag aag cag tgg	1238
Ser Glu Tyr Arg Arg Asp Ala His Thr Gln Thr Tyr Lys Lys Gln Trp	
335 340 345	

Zea mays

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Val Glu Pro Thr Ala Glu Gln Arg Ala Asp Pro Arg Ser Tyr Ala Asp	
350 355 360	
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Cys Thr His Trp Cys Leu Pro Gly Val Pro Asp Thr Trp Asn Glu Leu	
365 370 375	
ctc tac tgg aag ctc ttc ccc agc aac gat cag gtc ctc tga	1379
Leu Tyr Trp Lys Leu Phe Phe Pro Ser Asn Asp Gln Val Leu	
380 385 390	
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tta gat tgt aaa agg ctg act tat gat gct ctt gaa gga gct aac gtc	95
Leu Asp Cys Lys Arg Leu Thr Tyr Asp Ala Leu Glu Gly Ala Asn Val	
20 25 30	
act ccg acg tcc ttt tac aac att ggt gat ctt gag att caa gat aat	143
Thr Pro Thr Ser Phe Tyr Asn Ile Gly Asp Leu Glu Ile Gln Asp Asn	
35 40 45	
cta gca cga gta tgg gta gac att ggt att cat gag cca ttg ctt ctg	191
Leu Ala Arg Val Trp Val Asp Ile Gly Ile His Glu Pro Leu Leu	
50 55 60	
gac atc ctg ctt aat gcc tta aca aca ata agt tca gat cat gtt ggt	239
Asp Ile Leu Leu Asn Ala Leu Thr Thr Ile Ser Ser Asp His Val Gly	
65 70 75	
att aag caa gta cag ttt gga ggg tca gag ttt ttg aac tgg agc gag	287
Ile Lys Gln Val Gln Phe Gly Gly Ser Glu Phe Leu Asn Trp Ser Glu	
80 85 90 95	
gac ttg aag aca gaa gaa gtt gga tat agt gtg tgc aaa atc taa	332
Asp Leu Lys Thr Glu Glu Val Gly Tyr Ser Val Cys Lys Ile	
100 105	

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 Arg Ser Ala Arg Pro Ala Val Arg Ala Arg Glu Pro Ala Gly Pro Val
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 Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Gly Ala Asn
 35 40 45
 atc gtt ttg cag ccg cgg ttg tgc act ctg aga tcc tac ggt tcg gat 193
 Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp
 50 55 60
 cga gcg ggg gtt ctg atc aag gcc cgc aag gag ggt gac gat gat gac 241
 Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp
 65 70 75 80
 gtg tcc ccc ttc ttc gcc gct ctt tcc gac tat att gag agc tct aag 289
 Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys
 85 90 95
 aaa agt cat gat ttt gag atc atc tct ggt cgt cta gct atg atg gtg 337
 Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val

卷之三

100	105	110	
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Phe Ala Ala Thr Val Thr Met Glu Met Val Thr Gly Asn Ser Met Phe			
115	120	125	
aga aag atg gac att gaa gga atc aca gag gct ggt ggg gtg tgg ttg			433
Arg Lys Met Asp Ile Glu Gly Ile Thr Glu Ala Gly Gly Val Cys Leu			
130	135	140	
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Gly Ala Val Thr Cys Ala Ala Leu Phe Ala Trp Phe Ser Ser Ala Arg			
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aac aga gtt ggt cga atc ttc acc gtc agc tgc aac gca ttc atc gat			529
Asn Arg Val Gly Arg Ile Phe Thr Val Ser Cys Asn Ala Phe Ile Asp			
165	170	175	
tcc gta att gac caa atc gta gat ggt ttg ttc tat gaa ggc gac gac			577
Ser Val Ile Asp Gln Ile Val Asp Gly Leu Phe Tyr Glu Gly Asp Asp			
180	185	190	
cct act gat tgg ccc gat gaa ccg tga tcaaataatac cattttttacc			624
Pro Thr Asp Trp Pro Asp Glu Pro			
195	200		
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gga att aat cgt tgg cca tca cgg aag att aag aaa gtt ggg cac tcc			96
Gly Ile Asn Arg Trp Pro Ser Arg Lys Ile Lys Lys Val Gly His Ser			
20	25	30	
ctg aag aaa ttg caa atg gtg atc gat tca gta cat ggt agc gaa gga			144
Leu Lys Lys Leu Gln Met Val Ile Asp Ser Val His Gly Ser Glu Gly			
35	40	45	

acg gtt cag ctc agc tcg ctc tat gaa aac ttt acc aag acc aca tgg	50	55	60	192
Thr Val Gln Leu Ser Ser Leu Tyr Glu Asn Phe Thr Lys Thr Thr Trp				
tca gaa aga gag tta caa ggg gat gcc act tat cca ttg tca gag gaa	65	70	75	240
Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu				
aaa ggt ccc ttg gaa cct tct gtt cct gat cgg tat tgc gag ggc aga	85	90	95	288
Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg				
ttc acc tcg cat act tct ggt tct aat tcc ctc tca ccc tct tgt agc	100	105	110	336
Phe Thr Ser His Thr Ser Gly Ser Val Pro Ser Cys Ser				
caa agc tca aat tcc agc cat ggt tgt tcc agt ggt tcg aaa tca caa	115	120	125	384
Gln Ser Ser Asn Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln				
caa cat gtc agt gct cct caa ctt gca gta aag aaa gaa gtt ttc atg	130	135	140	432
Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met				
gag gag aat cag agc tcc aca cta ctc aaa gct gca agc cat gct gaa	145	150	155	480
Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu				
ctg cag atg ctt cct gaa gaa aga ctt gtc acc ctg cct agg tct cat	165	170	175	528
Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His				
agc caa gtg ctt tta agt gaa caa aag cca gtg gaa aat ata aca ggt	180	185	190	576
Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly				
atg caa atg tct aag cct gat tct ctc aag ata aaa gcc atg tac ggc	195	200	205	624
Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly				
gaa gaa aga tgt ata ttc cga ctg cag cct agt tgg gga ttt gaa aag	210	215	220	672
Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys				
cta aaa gaa gaa att cta aag cgg ttt ggc att gct cgg gag gtg tat	225	230	235	720
Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr				
gtg gac ctc aag tat ttg gat gat gaa tct gag tgg gtt ctt cta aca	245	250	255	768
Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr				
tgc aac gca gac ctc ctt gag tgt att gat gtg tac aag tca tca agt	260	265	270	816
Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser				

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Ser Ala Val Asn Gly Met Leu Arg Ala Arg Leu Arg Gly Ala Ala Arg			
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Val Arg Gly Gly Gly Glu Gly Ala Gly Arg Trp Thr Thr Pro Gly			
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cac gag gag cgc ccc aag ggg tac ctc ttc aac cg cg cg cg cct			798
His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn Arg Pro Pro Pro Pro			
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Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu Leu Pro Cys Tyr Val			
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acc tcc ttc ctc acc gtc gtc atc ctc ggc gtc ggc ctc aac gcg aag			894
Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val Gly Leu Asn Ala Lys			
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ccc gac ctt aca atc gag acg tgg gcg cac cag aag gcg ctc gag cgc			942
Pro Asp Leu Thr Ile Glu Thr Trp Ala His Gln Lys Ala Leu Glu Arg			
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ctc cag cag cag gag ctc gcc gct gcc gac acc cag gcc gag tga			987
Leu Gln Gln Glu Leu Ala Ala Ala Asp Thr Gln Ala Glu			
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act ggg caa gaa acc gat ttt gta tta gtt tca tgt tct gga cta gga					144
Thr Gly Gln Glu Thr Asp Phe Val Leu Val Ser Cys Ser Gly Leu Gly	35	40		45	
att gag cct tcc agg cgg gag cag gtt ctt aaa gcc aag agg gct ggt					192
Ile Glu Pro Ser Arg Arg Glu Gln Val Leu Lys Ala Lys Arg Ala Gly	50	55		60	
gaa gat tcc tta aga aga tct ggc ctt gga tac aca ata gtc cgt cct					240
Glu Asp Ser Leu Arg Arg Ser Gly Leu Gly Tyr Thr Ile Val Arg Pro	65	70		75	80
ggt cca ttg cag gaa gaa cct gga ggg cag cgt gct cta ata ttt gat					288
Gly Pro Leu Gln Glu Pro Gly Gly Gln Arg Ala Leu Ile Phe Asp	85	90		95	
caa gga aac aga ata tca cag ggc atc agc tgt gct gat gta gct gat					336
Gln Gly Asn Arg Ile Ser Gln Gly Ile Ser Cys Ala Asp Val Ala Asp	100	105		110	
ata tgt gtg aag gca cta cat gat aca act gca aga aac aaa agc ttt					384
Ile Cys Val Lys Ala Leu His Asp Thr Thr Ala Arg Asn Lys Ser Phe	115	120		125	
gat gta tgt tac gag tat att gct gag gat gga agg gag ctt tat gag					432
Asp Val Cys Tyr Glu Tyr Ile Ala Glu Asp Gly Arg Glu Leu Tyr Glu	130	135		140	
ctg gtt gca cac ttg ccc gac aaa gca aat aac tac ttg aca cca gca					480
Leu Val Ala His Leu Pro Asp Lys Ala Asn Asn Tyr Leu Thr Pro Ala	145	150		155	160
ctc tct gtc tta gag aag aat acc tga tcatcccttg ttgagacaaa					527
Leu Ser Val Leu Glu Lys Asn Thr	165				
atacttccca gaagatttca taaatttgc acctacgttc ttctacttct gcattggatc					587
aatgcagaag tgattcatgt aactatttt cctgtatata tattcttgtagcacaaat					647
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gcagccctt	acatactctc	tgccgactgc	ggtccgcacc	gcacgccatc	tcagcaagac	180														
gagagctcca	ccgcgcgttt	cacttcttct	gacgaagg	atg	gag	236														
			gca	Met	Ala															
			gca	Gly	Gly															
			gca	Lys	Lys															
			gca	Glu	Glu															
			gca	Asp	Asp															
			1	5																
gag	aat	gag	aag	cca	tcg	ttg	gtg	gca	gcc	ggc	aag	caa	gat	cg	284					
Glu	Asn	Glu	Lys	Pro	Ser	Leu	Val	Ala	Ala	Gly	Gly	Lys	Gln	Asp	Arg					
10								15					20							
aca	g	c	g	acc	ac	g	a	tcc	ctt	ccg	caa	agg	ac	g	at	ttt	gag	tgg	332	
Thr	Ala	Ala	Thr	Thr	Glu	Ser	Leu	Pro	Gln	Arg	Thr	Asn	Leu	Glu	Trp					
25								30					35							
gga	a	g	c	g	t	g	a	gc	g	at	c	a	g	t	t	g	t	g	380	
Gly	Lys	Ala	Ala	Cys	Ser	Glu	Asp	Asp	Ile	Gln	Lys	Cys	Val	Ala	Ala					
40								45					50							
ggt	g	cc	t	tc	cat	ccc	gg	g	at	tc	g	a	g	t	cc	g	tc	a	428	
Gly	Ala	Phe	His	Pro	Gly	Glu	Leu	Val	Glu	Trp	Arg	Ala	Pro	Val	Lys					
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gat	g	ag	ac	cc	ct	tcc	acc	at	g	at	g	c	ttt	gtt	at	tc	ct	476		
Asp	Glu	Thr	Pro	Thr	Leu	Ser	Thr	Met	Glu	Asp	Gln	Phe	Val	Ile	Leu					
75								80					85							
tct	ct	tg	ac	c	at	tt	tg	gg	gt	gc	ag	g	at	tt	ct	tc	524			
Ser	Leu	Thr	His	Ile	Ile	Cys	Gly	Leu	Arg	Val	Asp	Ala	Ser	Asp	Phe					
90								95					100							
ctg	gt	gt	ct	g	tg	ta	ca	tt	ga	tg	tc	ca	ct	ac	tg	ac	572			
Leu	Val	Ser	Val	Leu	Glu	Tyr	Tyr	Arg	Leu	Glu	Trp	Ser	His	Leu	Thr					
105								110					115							
ccc	aa	c	t	tt	ac	gc	ct	tg	tt	cc	ac	tt	tt	tg	gg	cc	620			
Pro	Asn	Ser	Ile	Thr	Ala	Leu	Ser	Ile	Phe	Ala	His	Leu	Cys	Glu	Ala					
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Tyr	Val	Glu	Ala	Pro	Pro	Thr	Val	Glu	Val	Phe	Thr	His	Phe	Tyr	Ser					
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Leu	Tyr	His	Asn	Arg	Lys	Gly	Glu	Thr	Thr	Leu	Gly	Ala	Val	Tyr						
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Phe	Arg	Leu	Arg	Asp	Arg	Met	Lys	Lys	Asn	Tyr	Pro	Leu	Tyr	Tyr	Leu					

ESTABLISHED

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Arg Ser Ser Gln Phe Met Trp Val Ser Leu Trp Phe Tyr Ala Lys Val			
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cca aag agc tgt cgc ttg acc ttc agg ggt gat ata cta aag gag gaa			860
Pro Lys Ser Cys Arg Leu Thr Phe Arg Gly Asp Ile Leu Lys Glu Glu			
200	205	210	
aac aat tgg aat tgg aaa gat ctt ttg cct ctt tcc tgt gag cag atg			908
Asn Asn Trp Asn Trp Lys Asp Leu Leu Pro Leu Ser Cys Glu Gln Met			
215	220	225	230
aag cag gtc ggc caa atc atg aag cta agt aac caa ggc ttg act ggt			956
Lys Gln Val Gly Gln Ile Met Lys Leu Ser Asn Gln Gly Leu Thr Gly			
235	240	245	
gca gac atc att cat gat tac ctc aag cgc cgg att agc cct ttg cgc			1004
Ala Asp Ile Ile His Asp Tyr Leu Lys Arg Arg Ile Ser Pro Leu Arg			
250	255	260	
cga agg atg cat ttg aca tgc aat tat tct ggc ctc tca gat cct acc			1052
Arg Arg Met His Leu Thr Cys Asn Tyr Ser Gly Leu Ser Asp Pro Thr			
265	270	275	
agg gat tca gac aaa gat ctt tct gtg gaa gac att gag agc aag ctg			1100
Arg Asp Ser Asp Lys Asp Leu Ser Val Glu Asp Ile Glu Ser Lys Leu			
280	285	290	
agc tac ctt cta gat ctt aag agg atg ggt gtg aag cag cct aca ggt			1148
Ser Tyr Leu Leu Asp Leu Lys Arg Met Gly Val Lys Gln Pro Thr Gly			
295	300	305	310
aga ctg gtc aga gca tca acc aat gac caa gcc aat cag cct cta gac			1196
Arg Leu Val Arg Ala Ser Thr Asn Asp Gln Ala Asn Gln Pro Leu Asp			
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Leu Leu Asn Val Cys Ser Thr His Glu Ala Lys Lys Glu Ala Gln Pro			
330	335	340	
caa gtt tgt gcc tcc cta cga aga tac aca agg caa tct gct ggt ccc			1292
Gln Val Cys Ala Ser Leu Arg Arg Tyr Thr Arg Gln Ser Ala Gly Pro			
345	350	355	
agg aag gtt gca gta cct cca cct ctt aaa att gac cct ccc ccc act			1340
Arg Lys Val Ala Val Pro Pro Leu Lys Ile Asp Pro Pro Pro Thr			
360	365	370	
caa ggt ccg gcc cca gaa gag att cta gat gcc aca aca aac ata gcg			1388
Gln Gly Pro Ala Pro Glu Glu Ile Leu Asp Ala Thr Thr Asn Ile Ala			
375	380	385	390
act gca gtt tct cca aac ctg ggc gta gaa caa aaa tct ata gag cac			1436
Thr Ala Val Ser Pro Asn Leu Gly Val Glu Gln Lys Ser Ile Glu His			
395	400	405	

cct act gtg gct gaa gag cg ^g aaa ata gca gag tta gtg aaa cct acg Pro Thr Val Ala Glu Glu Arg Lys Ile Ala Glu Leu Val Lys Pro Thr 410	415	420	1484	
ttt tca gtc att ggt gcc aaa agg aag gca tct gcc ccc cg ^g tct cgt Phe Ser Val Ile Gly Ala Lys Arg Lys Ala Ser Ala Pro Arg Ser Arg 425	430	435	1532	
tca aag aga aga gca aag tat tca tta ctt tcc gtt gtt aca aag acc Ser Lys Arg Arg Ala Lys Tyr Ser Leu Leu Ser Val Val Thr Lys Thr 440	445	450	1580	
agg atg tca tct ttg gac act ggt tct ata aaa ggg act tct aga aca Arg Met Ser Ser Leu Asp Thr Gly Ser Ile Lys Gly Thr Ser Arg Thr 455	460	465	470	1628
aaa gag gca gtg tta gc ^g ctg aat tca cgg tca ata gga ttg gct cga Lys Glu Ala Val Leu Ala Leu Asn Ser Arg Ser Ile Gly Leu Ala Arg 475	480	485	1676	
tgc cct cct gcc tct tta gca gaa ggg aca ggg aac ggt gga ctg ttc Cys Pro Pro Ala Ser Leu Ala Glu Gly Thr Gly Asn Gly Leu Phe 490	495	500	1724	
atg ctt gcc aaa gtt gtt gac cat act aag gtt gtt gag gat tcc atg Met Leu Ala Lys Val Val Asp His Thr Lys Val Val Glu Asp Ser Met 505	510	515	1772	
tcg aat ata ctc ctt aat caa caa gtt gga gat tct tct cgc aag gag Ser Asn Ile Leu Leu Asn Gln Gln Val Gly Asp Ser Ser Arg Lys Glu 520	525	530	1820	
gtt gat cct gca caa tct atc act gag att gtc caa gac cag gag gcc Val Asp Pro Ala Gln Ser Ile Thr Glu Ile Val Gln Asp Gln Glu Ala 535	540	545	550	1868
att gag gtt tca gct gcc att ccg gtg cct aat aag gag gaa ata aac Ile Glu Val Ser Ala Ala Ile Pro Val Pro Asn Lys Glu Glu Ile Asn 555	560	565	1916	
agt ggg gtg ata tgg gag cg ^g atg cag aaa gtt cag agt gaa tac gtg Ser Gly Val Ile Trp Glu Arg Met Gln Lys Val Gln Ser Glu Tyr Val 570	575	580	1964	
tca ctc agt atg aca gcc tcc tct gag ctt tta gaa caa gca aag aag Ser Leu Ser Met Thr Ala Ser Ser Glu Leu Leu Glu Gln Ala Lys Lys 585	590	595	2012	
ctg gtc atg gag aat aaa cgc ctg aag gac gtg cag ata atg ctg tcg Leu Val Met Glu Asn Lys Arg Leu Lys Asp Val Gln Ile Met Leu Ser 600	605	610	2060	
caa caa gtg aaa gac ctc gaa gac ggc aga agg ctc tta aca gaa agg Gln Gln Val Lys Asp Leu Glu Asp Gly Arg Arg Leu Leu Thr Glu Arg 615	620	625	630	2108

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agt aag cag aat gag tca acc cta ggg gcc ttg gtc cat aaa tgc act Ser Lys Gln Asn Glu Ser Thr Leu Gly Ala Leu Val His Lys Cys Thr 665 670 675	2252
ctg ttg gac cgc tac aaa gag gag tct gct cag ctc att aga gag aag Leu Leu Asp Arg Tyr Lys Glu Glu Ser Ala Gln Leu Ile Arg Glu Lys 680 685 690	2300
gaa gag ctg caa tcg cgt gtt tcg cgt gtc aat gat ctt gtc aag cta Glu Glu Leu Gln Ser Arg Val Ser Arg Val Asn Asp Leu Val Lys Leu 695 700 705 710	2348
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ctgagttgac tgagtcttcg taactcgctc tctactgtct cagctactca tcgcattctc	180
tgcatattatc ctccgatcac attttctctc tcttcgttcg gg atg tcg gag aaa Met Ser Glu Lys 1	234
gct ctt agg gat ctc aat aca att ctt gga act gaa agg aag aat gag Ala Leu Arg Asp Leu Asn Thr Ile Leu Gly Thr Glu Arg Lys Asn Glu 5 10 15 20	288
gac tcc agt aag gca tgt tta tcc aag cct tct gtt gac aat gct gtt	330

Asp Ser Ser Lys Ala Cys Leu Ser Lys Pro Ser Val Asp Asn Ala Val			
25	30	35	
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Glu Asn Ile Glu Glu Trp Gln Lys Lys Asn Asn Ser Pro Ser Leu Val			
40	45	50	
tct cca gct gtt aat gga aat ctg gct gtg act gct aat tct ggt gcg			426
Ser Pro Ala Val Asn Gly Asn Leu Ala Val Thr Ala Asn Ser Gly Ala			
55	60	65	
gag gtt gta aat cca gaa gta gaa tat att gaa tct gag aac ttg aat			474
Glu Val Val Asn Pro Glu Val Glu Tyr Ile Glu Ser Glu Asn Leu Asn			
70	75	80	
gat gta gac gat att gat act tgt ctc aag acc cta tta gct gga ctt			522
Asp Val Asp Asp Ile Asp Thr Cys Leu Lys Thr Leu Leu Ala Gly Leu			
85	90	95	100
gac tca aag gat tgg gtc ctg gtt tgt gac aca ctg aat aac gta cgt			570
Asp Ser Lys Asp Trp Val Leu Val Cys Asp Thr Leu Asn Asn Val Arg			
105	110	115	
cga ttg tct ata ttt cat aag gaa gca atg ctt gat atg ctg ggg gat			618
Arg Leu Ser Ile Phe His Lys Glu Ala Met Leu Asp Met Leu Gly Asp			
120	125	130	
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Val Ile Thr Ser Ile Ala Lys Ser Leu Lys Ser Pro Arg Ser Ala Val			
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Cys Lys Thr Ala Ile Met Thr Ser Ala Asp Ile Phe Ser Ala Tyr Asn			
150	155	160	
gat ctt ata ata gat tca ttg gac cct ctg cta gta caa ctt ctt ctc			762
Asp Leu Ile Ile Asp Ser Leu Asp Pro Leu Leu Val Gln Leu Leu Leu			
165	170	175	180
aag tct tca caa gac aaa cgc ttt gta tgt gag gca gct gaa aaa gcc			810
Lys Ser Ser Gln Asp Lys Arg Phe Val Cys Glu Ala Ala Glu Lys Ala			
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Leu Ile Ser Met Thr Ile Trp Ile Ser Pro Ile Ser Leu Leu Pro Lys			
200	205	210	
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Leu Gln Pro Tyr Leu Lys Asn Lys Asn Pro Arg Ile Arg Ala Lys Ala			
215	220	225	
tca atg tgc ttt tct cgg agt gtt cct cag ctg ggt gca gaa ggc ata			954
Ser Met Cys Phe Ser Arg Ser Val Pro Gln Leu Gly Ala Glu Gly Ile			
230	235	240	
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Lys Thr Tyr Gly Ile Asp Lys Leu Ile Gln Val Ala Ala Ser Gln Leu			

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245	250	255	260	
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Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg Thr Leu Leu				
265	270	275		
gag ctt caa aat gtg tat gag aaa tct cat gat ctc atc aag cca gct				1098
Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu Ile Lys Pro Ala				
280	285	290		
act cct act gtc aat aat gag cat act gtg aat gag gag aat cca gag				1146
Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu Glu Asn Pro Glu				
295	300	305		
gtg agt tct tgg gaa agc ttc tgt cag tca aaa ctt tct cct ctt agt				1194
Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu Ser Pro Leu Ser				
310	315	320		
gct caa gct gta ctt cgt gta acc acc agt atc gct cggt ggt ctt				1242
Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala Arg Glu Gly Leu				
325	330	335	340	
gtt tca tga cacgcacatt aaacctcaact ttgcggcttt catcatttcc				1291
Val Ser				
ttgtttgctt atcattttct tctgtaaata cagtgcgaca attgagatga ttgagttgag				1351
ttgtcgtcga agcacgtatt gagcccaaga tttataatgt gtattctatt atttcccccc				1411
tagctgttgt tacctatatt acttttgatt aatactacta ctactactag ataatggacc				1471
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caa gga aat atg cat gaa cct gct atc gac atg cct ttt gga agt gta				96
Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val				
20 25 30				
ctt ctg caa gca ctg gtt tca agt gat gtc aat gga gat atg gag gca				144
Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala				
35 40 45				

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caa agc aag gat cgt gta ttg caa att cag ctt gag aca ctt aca ccg Gln Ser Lys Asp Arg Val Leu Gln Ile Gln Leu Glu Thr Leu Thr Pro 65 70 75 80	240
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tcc atc gca gcc tca aca gag gga gaa aac aac caa aac aac cca Ser Ile Ala Ala Ser Thr Glu Gly Glu Asn Asn Gln Asn Asn Gln Pro 100 105 110	336
gaa gaa ccg tac att caa cct gtt att ctt cgg cta ctc atc ata tgg Glu Glu Pro Tyr Ile Gln Pro Val Ile Leu Arg Leu Leu Ile Ile Trp 115 120 125	384
ctt gtt gat tgt tca aat gct gtt aac tgc ctg ttg gaa tca gca gtg Leu Val Asp Cys Ser Asn Ala Val Asn Cys Leu Leu Glu Ser Ala Val 130 135 140	432
cat ctg aac tac ata ata gag ctt gct tca agc aaa cgt tac act gct His Leu Asn Tyr Ile Ile Glu Leu Ala Ser Ser Lys Arg Tyr Thr Ala 145 150 155 160	480
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Ile Arg Glu Asn Ile Met Asp Ile Phe Ser Arg Thr Lys Thr Ala Thr			
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Ala Leu Leu Pro Thr Glu Leu Glu Gln Lys Asn Gly Glu Val Asp Gly			
290	295	300	
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Glu Tyr Ile Lys Arg Leu Lys Ser Phe Val Glu Lys Gln Cys Asn Glu			
305	310	315	320
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Met Gln Asp Leu Leu Ala Arg Asn Ala Met Leu Ala Glu Glu Leu Val			
325	330	335	
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Arg Thr Gly Gly Thr Thr Asp Thr Ser Gln Arg Pro Asn Asn			
340	345	350	
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Gly Arg Glu Arg Val Gln Ile Glu Ala Leu Arg Gln Glu Leu Glu Gly			
355	360	365	
gcg aga cga cag ata gag gca ctc gaa act gac aag tcc cag atc gaa		1152	
Ala Arg Arg Gln Ile Glu Ala Leu Glu Thr Asp Lys Ser Gln Ile Glu			
370	375	380	
gcc gaa gct aac aac caa cga aac ctt gca gta aaa ctg gag tcc gat		1200	
Ala Glu Ala Asn Asn Gln Arg Asn Leu Ala Val Lys Leu Glu Ser Asp			
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405	410	415	
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Arg Leu Asp Ala Glu Val Lys Thr Leu Arg Gln Gly Gly Ser Val Pro			
420	425	430	
tat cct gac gtg gag qca ata aag gcg caa gcc aag gaa gag gct gag		1344	
Tyr Pro Asp Val Glu Ala Ile Lys Ala Gln Ala Lys Glu Glu Ala Glu			
435	440	445	
aag gac agt gag gcg gag ctg aac ggt ctg ctt gtc tgc ctc ggt cag		1392	
Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln			
450	455	460	
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Glu Gln Thr Lys Val Glu Lys Leu Ser Thr Arg Leu Ala Glu Leu Gly			
465	470	475	480
gaa gat gtg gat gcc ctt ctg caa ggt att ggt gac gac act gcc att		1488	
Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile			
485	490	495	
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Pro Asp Asp Asp Asp Asp Glu Asp Ser Glu Glu			

500

505

tatgtttatg taaccctgta ggtctgttgg tgcacacaac ctcacgttgg gtcatgatat 1590
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gatcactg cag ttt aag att gat cca caa gat ttt caa gat tca gaa cca 170
Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro
1 5 10
gat att ctt gca aat tct gct tca tcg ata ata gaa cgg atc aaa gaa 218
Asp Ile Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu
15 20 25 30
aac agt gat cag tgt gcc gcg gct ctc agg tcg ctc tgt cgc cgaa 266
Asn Ser Asp Gln Cys Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys
35 40 45
aag ggc ctc act gtc gag gag gca agc ttg att ggt gtt gac agc ctt 314
Lys Gly Leu Thr Val Glu Ala Ser Leu Ile Gly Val Asp Ser Leu
50 55 60
ggg att gat gta aga gcc ttt tct ggc ttg gaa gtt aag act gtt cga 362
Gly Ile Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg
65 70 75
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Phe Ser Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys
80 85 90
atc agg cga atg ctt ttc ccc cgt taccagcgta aaaacgtgaa agcctctact 464
Ile Arg Arg Met Leu Phe Pro Arg
95 100
gaagatgagt cttaacctat cagctgtttt tcctgagaaa gcatgcaaac acctgggttca 524
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cgaataaggt gccagttcat gtataaaaga tgaactgcga ctttatgctg gcggaaactg 764
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 Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30

tgt cga gaa gct gaa ggg agg cca aga att gca tct gtc tat gct gat 144
 Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

ata gag aga agg gtt ggg ggc ttc gac ttt tta gag tgt aat aac aag 192
 Ile Glu Arg Arg Val Gly Gly Phe Asp Phe Leu Glu Cys Asn Asn Lys
 50 55 60

gac ttc agg gct ctc aga ata ttg ggt gca ttg aac gcg aga gat gct 240
 Asp Phe Arg Ala Leu Arg Ile Leu Gly Ala Leu Asn Ala Arg Asp Ala
 65 70 75 80

aag aac aag aat gac agc agt ggc aga cca atg gct act cac aga aca 288
 Lys Asn Lys Asn Asp Ser Ser Gly Arg Pro Met Ala Thr His Arg Thr
 85 90 95

gga tat gac cta acc acc tct gga agc ttc cag gct cct att gtg gtc 336
 Gly Tyr Asp Leu Thr Thr Ser Gly Phe Gln Ala Pro Ile Val Val
 100 105 110

atg aag cct gca gga acc act gaa aag cat ggg gtt tca ctt gct tct 384
 Met Lys Pro Ala Gly Thr Thr Glu Lys His Gly Val Ser Leu Ala Ser
 115 120 125

gtt gcc ccc ata gca ggc cta aga agc ctt aga aag ttg cca gct aga 432
 Val Ala Pro Ile Ala Gly Leu Arg Ser Leu Arg Lys Leu Pro Ala Arg

卷之三

130	135	140	480
tat tca tct ttc act ggc aca aat gag acc agc aca aat gag aat att Tyr Ser Ser Phe Thr Gly Thr Asn Glu Thr Ser Thr Asn Glu Asn Ile 145	150	155	160
cat ctt cgg atg tca aga gct caa ttg aag tct gaa gaa act gtc agc His Leu Arg Met Ser Arg Ala Gln Leu Lys Ser Glu Glu Thr Val Ser 165	170	175	528
agt gcc aac tcg cca agg cct aca agc tca tca agt ccc aga aat gtg Ser Ala Asn Ser Pro Arg Pro Thr Ser Ser Ser Pro Arg Asn Val 180	185	190	576
cta aag aat gca gag cct gag agg aga tcc cgt cca cct gtt tca cca Leu Lys Asn Ala Glu Pro Glu Arg Arg Ser Arg Pro Pro Val Ser Pro 195	200	205	624
aaa tct cca agc aag aag tcc aat gaa gtt gtc tcc cca aaa gga aga Lys Ser Pro Ser Lys Lys Ser Asn Glu Val Val Ser Pro Lys Gly Arg 210	215	220	672
aca aga tca aag cct tct cag gtg aaa agc cac cgt gat gag gtc tta Thr Arg Ser Lys Pro Ser Gln Val Lys Ser His Arg Asp Glu Val Leu 225	230	235	720
cag agt aca ggg aac aga ata agc tta gct aag cag gta gat gtc agc Gln Ser Thr Gly Asn Arg Ile Ser Leu Ala Lys Gln Val Asp Val Ser 245	250	255	768
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cca agc aat gct gct gca aca gca agt cat aag gct cct tca att ctg Pro Ser Asn Ala Ala Ala Thr Ala Ser His Lys Ala Pro Ser Ile Leu 275	280	285	864
gat tca gac caa aac att cat tca ctg gac aac att cca agc cct gtc Asp Ser Asp Gln Asn Ile His Ser Leu Asp Asn Ile Pro Ser Pro Val 290	295	300	912
tct gtc ctt gat acg tcc ttc tat cat aaa agg atc tca gat tca ttc Ser Val Leu Asp Thr Ser Phe Tyr His Lys Arg Ile Ser Asp Ser Phe 305	310	315	960
aaa gat ggt gag aca cat tct tca gag gaa tgc tgg aac cca aac agc Lys Asp Gly Glu Thr His Ser Ser Glu Glu Cys Trp Asn Pro Asn Ser 325	330	335	1008
ctg cct gac aca cca cag tca aaa gcg agc agt gaa gcc aac cag att Leu Pro Asp Thr Pro Gln Ser Lys Ala Ser Ser Glu Ala Asn Gln Ile 340	345	350	1056
aaa cca gaa aat ttg gaa gtt ctg atc cag aag ctt gag caa cta caa Lys Pro Glu Asn Leu Glu Val Leu Ile Gln Lys Leu Glu Gln Leu Gln 355	360	365	1104

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caa cca tca aat tat cca atc aat ccg gag ctc ttc ctc att ctt gag Gln Pro Ser Asn Tyr Pro Ile Asn Pro Glu Leu Phe Leu Ile Leu Glu 420 425 430	1296
caa aca aaa cca gac tta gtt ttt gca ttc caa act gtc agt gga act Gln Thr Lys Pro Asp Leu Val Phe Ala Phe Gln Thr Val Ser Gly Thr 435 440 445	1344
aag aaa agt tgt aag cct tac acg ggg aag ctt cac cga aga ctt gtg Lys Lys Ser Cys Lys Pro Tyr Thr Gly Lys Leu His Arg Arg Leu Val 450 455 460	1392
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tct gga agc cag cca gta aag ttt ctt caa tca agg aag ttg agt ggg Ser Gly Ser Gln Pro Val Lys Phe Leu Gln Ser Arg Lys Leu Ser Gly 485 490 495	1488
tgg caa cta ttc aag gat ttg tgc act gag gtt gac agg caa ata aaa Trp Gln Leu Phe Lys Asp Leu Cys Thr Glu Val Asp Arg Gln Ile Lys 500 505 510	1536
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gtc aat gga acg aaa gat tgg atg agc ttc gac act atg cta cat ggc Val Asn Gly Thr Lys Asp Trp Met Ser Phe Asp Thr Met Leu His Gly 530 535 540	1632
atg gtt tgg gag att gaa cga tcc atc ttc aag ggt ctt atc gac gag Met Val Trp Glu Ile Glu Arg Ser Ile Phe Lys Gly Leu Ile Asp Glu 545 550 555 560	1680
gtt atc ggc ggt gag act ata gag aag atg caa ttt ggg caa agg aaa Val Ile Gly Gly Glu Thr Ile Glu Lys Met Gln Phe Gly Gln Arg Lys 565 570 575	1728
ctg cag agg cag ctt tct ttc agt agt ata aac tga atacgcgtcg Leu Gln Arg Gln Leu Ser Phe Ser Ser Ile Asn 580 585	1774

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 Ile His Cys Leu Ala Val Gln Met Leu Leu Arg Cys Leu Leu Met
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gat ctt gat cga caa aac act gga aag gct aca gtg cta ggt gat gct 144
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45

gcg cga gta ctg cga gat cta atc act caa gtg gaa tct ctc agg cag 192
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
 50 55 60

gaa caa tct gct ctt gta tcg gag cgc caa tat gtc agt tcc gag aag 240
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80

aat gag ctg caa gag gag aac agt tcg ctc aag tcc caa ata tcg gaa 288
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 85 90 95

cta caa acc gag ctc tgc gca agg atg agg agc agc ctg agc caa 336
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110

acc agc atc ggg atg tcg gat ccg gca act cac cag cag atg cag atg 384
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125

tgg agc agc att ccc cac tta agc tcc gtg gcc atg gcg gcg cca 432
 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
 130 135 140

gca agt gca gcg tcc ccg ttg cac ggc cag gag ggc tac tct gct gac 480
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
 145 150 155 160

1000
900
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500
400
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200
100

gcc ggt caa gcg ggc tac gcg ccg cag ccg caa cct cgg gag ctg cag	528
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165 170 175	
ctc ttt ccg ggg tca tcg gca tcg tct tca ccg gag cgt gaa cgt tct	576
Leu Phe Pro Gly Ser Ser Ala Ser Ser Pro Glu Arg Glu Arg Ser	
180 185 190	
tcc cgg ctc gga agc ggc cag gcc acg cgg ccg agc ctg aca gat tcc	624
Ser Arg Leu Gly Ser Gly Gln Ala Thr Arg Pro Ser Leu Thr Asp Ser	
195 200 205	
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Leu Pro Gly Gln Leu Cys Leu Ser Leu Leu Gln Pro Ser Gln Glu Ala	
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Ser Gly Gly Gly Gly Val Met Ser Arg Ser Arg Glu Glu Arg	
225 230 235 240	
cg ¹⁰ gac ggg tag ccaactgaca gacaacgcac ttgaatcggg gtgtgtggcg	772
Arg Asp Gly	
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cta atgctgg tagctgcct gtgttgagcg gcagctctgc ttgttctaga agcttctgag	892
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Leu Ile Leu Leu Gln Thr Arg Gly Ile Gly Ala Leu His Lys Glu Leu	
20 25 30	
cca aaa gcg tgt gct ttg act ggc agc agt gat ccg tgc tac atc gaa	143
Pro Lys Ala Cys Ala Leu Thr Gly Ser Ser Asp Pro Cys Tyr Ile Glu	
35 40 45	

gca tat cat ttg gca gat cca act gat ggc aga att acc cta cat cta Ala Tyr His Leu Ala Asp Pro Thr Asp Gly Arg Ile Thr Leu His Leu 50 55 60	191
aag att tta aat ttg act gag ctg gaa ctc aac agg gtg gac atc cgt Lys Ile Leu Asn Leu Thr Glu Leu Glu Leu Asn Arg Val Asp Ile Arg 65 70 75	239
gtt ggc ctg tct gga gca ctg tat tat atg gat ggt ttc tct cgc act Val Gly Leu Ser Gly Ala Leu Tyr Tyr Met Asp Gly Phe Ser Arg Thr 80 85 90 95	287
gtt cgt cac ctt cg ^g aat ctt gtt tcc cag gat cca gtc caa agt agt Val Arg His Leu Arg Asn Leu Val Ser Gln Asp Pro Val Gln Ser Ser 100 105 110	335
gtg act gtt gga gtt tca cat ttt gag aga tgc tcg ctc tgg gtt caa Val Thr Val Gly Val Ser His Phe Glu Arg Cys Ser Leu Trp Val Gln 115 120 125	383
gtt ttg tat tac ccg ttt tat gga agt agt gga tca aca gac tat gaa Val Leu Tyr Tyr Pro Phe Tyr Gly Ser Ser Gly Ser Thr Asp Tyr Glu 130 135 140	431
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ggc aca tac aca tat gaa ggc agt ggt ttc aag gcc acc gct gct cag Gly Thr Tyr Thr Tyr Glu Gly Ser Gly Phe Lys Ala Thr Ala Ala Gln 210 215 220	671
cag tat gac agc tct ccc ttc ctc agt gga ttg aag tcg att tct tct Gln Tyr Asp Ser Ser Pro Phe Leu Ser Gly Leu Lys Ser Ile Ser Ser 225 230 235	719
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ttc cag tta tgt tat gca gca aag aca tgg ttt ggt gga ttt gtg ggc Phe Gln Leu Cys Tyr Ala Ala Lys Thr Trp Phe Gly Gly Phe Val Gly 260 265 270	815

植物基因组数据库

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gat gag acc acc aca atg atc tgc aaa ttc gtc atg cgc gca tcc gat	911
Asp Glu Thr Thr Met Ile Cys Lys Phe Val Met Arg Ala Ser Asp	
290 295 300	
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Glu Ser Ile Thr Arg Glu Ile Lys Ser Asp Leu Gln Gly Trp Leu Asp	
305 310 315	
gat atc acc gac ggc gct gtg gaa tac atg cct gag gat gag gtg aag	1007
Asp Ile Thr Asp Gly Ala Val Glu Tyr Met Pro Glu Asp Glu Val Lys	
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agt gtg gcc gcc gag cag ctg aag atc tcc atg gag agg att gcc ctg	1055
Ser Val Ala Ala Glu Gln Leu Lys Ile Ser Met Glu Arg Ile Ala Leu	
340 345 350	
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Leu Lys Ala Ala Arg Pro Lys Val Pro Pro Ala Lys Thr Asp Gln Glu	
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gag gaa gag gag cga aag cag agc gag gaa cta gat ggg ttt gga aac	1151
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Pro Lys Gly Pro Ser Thr Leu Ser Lys Leu Thr Ala Glu Glu Ala Glu	
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His Arg Ala Leu Gln Ala Ala Val Leu Gln Glu Trp His Gln Leu Cys	
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Lys Glu Arg Ala Met Lys Ala Gln	
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gtgcacgaaa aaac ^{ctgttt} tt tgtaacatac tactgttagg gcgttttaa gcttcgg ^{tgt}	1474
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gct gga gct ggt ctc cct gtt cac atg aaa ggt gaa cta aac aca gct      96
Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala
20          25          30

ttc ata gga ctg ggg gat gac ggt gga tat ggt ggt ggc tgg gtt cct      144
Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Trp Val Pro
35          40          45

ttg gca gct ctt aaa aag gtg ctg aga ggg atc cta aag tac ctc gga      192
Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly
50          55          60

gtt cta tgg ttg ttt gca caa ttg cct gaa ctt ttg aaa gaa ata cta      240
Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Leu Lys Glu Ile Leu
65          70          75          80

gga tca atc tta aag gac aat gaa ggt gct ctc ttg aat ttg gat caa      288
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85          90          95

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Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val
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Ser Val His Arg Val Gln Leu Leu Gln Val Leu Ser Val Lys Arg
115         120         125

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Phe His His Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu
130         135         140

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Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg
145         150         155         160

cgt gtt gcc tcc gaa cca tat gat gct tct aga gtt gct tct ttt atc      528
Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile
165         170         175

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Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu
180         185         190

att aca tgg aag aaa ggt ctt tcc ccg gtt cat ggg gac att gct act      624
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PAPILLOMAVIRUS

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cat cat gat aga gcc cac agt tca gta gaa ttt gcc ctg aca ttt gta His His Asp Arg Ala His Ser Ser Val Glu Phe Ala Leu Thr Phe Val 245	250	255	768
ctt gac cat gct ctt att cct cac atg aat gta gct gga gga gct gcc Leu Asp His Ala Leu Ile Pro His Met Asn Val Ala Gly Gly Ala Ala 260	265	270	816
tgg ctt cca tat tgt gta tct gtg aaa ctt cgc tat tct ttt ggg gac Trp Leu Pro Tyr Cys Val Ser Val Lys Leu Arg Tyr Ser Phe Gly Asp 275	280	285	864
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tca aga gct gtg gaa act gtg aat ggg tct ggt gta gct gga gag gta Ser Arg Ala Val Glu Thr Val Asn Gly Ser Gly Val Ala Gly Glu Val 325	330	335	1008
ggc caa gga agg ctg cga atg gtt gca gag atg atc caa aag cag ctt Gly Gln Gly Arg Leu Arg Met Val Ala Glu Met Ile Gln Gln Leu 340	345	350	1056
caa ctc tgt cta caa cag cta aga gat gac cca ctt tct gca ggc tct Gln Leu Cys Leu Gln Gln Leu Arg Asp Asp Pro Leu Ser Ala Gly Ser 355	360	365	1104
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aac aat ata cga gaa atg cag gct cag aaa gtc aga gga aca ctt ttg 191
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tat ttt caa gtt aat gag gta ttt gct gac cat tgc tca agt caa aat 287
 Tyr Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn
 80 85 90 95

cca att gat gtc cca cga agt tgg att tgg gac ctc cca aga cga act 335
 Pro Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr
 100 105 110

gtt tac ttt gga acc tca gtt cct aca ata ttc aga ggt tta acg act 383
 Val Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr
 115 120 125

gaa gag ata caa cga tgc ttt tgg aga gga ttt gtt tgc gtg agg ggc 431
 Glu Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly
 130 135 140

ttt gat agg aca gtg agg gca cca agg ccc ctt tat gca agg ttg cat 479
 Phe Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His
 145 150 155

ttt cct gtc agc aag gtt gtt aga ggc aaa aag cct gga gca gca aga	527
Phe Pro Val Ser Lys Val Val Arg Gly Lys Lys Pro Gly Ala Ala Arg	
160	165
	170
	175
gca gaa gaa taa tagtacattg aagaaatata ggggtgctaa ccagacgagg	579
Ala Glu Glu	
atggatagcc cgaaatgaga tgctgaccca ataggcgcc aaatcacctc caaattctaa	639
cccaatgact tccatctgta atgaatggca ataccttcaa aacctgtat ggagatgttt	699
tgtggcgaca tgatcttta aatttagattc cgtcttgggt aacagcctag ctgttcttgc	759
tgagtcgcat attctttatt ctgaagatca atatagcaaa tgggagaaaa aacatagtgc	819
acagtcgagc tgttctaatt gtacctcttg tgagtggaat cagttgttgt acaacaggaa	879
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	15

tgc ctg agc ttg cac aag aca atg gag ctg cag ccg gag ctg tcg ctc	95
Cys Leu Ser Leu His Lys Thr Met Glu Leu Gln Pro Glu Leu Ser Leu	
20	25
	30

ggc cct gtg tgg ccg ggc ttc gcc gcc ggt gac ctg gcc gcc aag agc	143
Gly Pro Val Trp Pro Gly Phe Ala Ala Gly Asp Leu Ala Ala Lys Ser	
35	40
	45

tcc tcg tcc gag tct gac gga acc tcc cgg aag aag agg aag cac tac	191
Ser Ser Ser Glu Ser Asp Gly Thr Ser Arg Lys Lys Arg Lys His Tyr	
50	55
	60

acc gcc agc tgg gag gag cct cag cag ccg ccc gcg agc ctg gag ctc	239
Thr Ala Ser Trp Glu Glu Pro Gln Gln Pro Pro Ala Ser Leu Glu Leu	
65	70
	75

cag ctc aac gac cca ctg cct ctc gac tgg gag cag tgc ctc gac ctc	287
Gln Leu Asn Asp Pro Leu Pro Leu Asp Trp Glu Gln Cys Leu Asp Leu	
80	85
	90
	95

caa tct ggg agg atg tat tac ctc aac cgg aag acg ctg aag aag agc Gln Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser 100 105 110	335
tgg gtc aga ccc cag gtg cag agc gtg aac ctg gac ctc aac atc tcc Trp Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser 115 120 125	383
acg gct gcc gcc atc gac aac tgt gcc gac aac ggt gct gct gcc gct Thr Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala 130 135 140	431
gct tcc gac gac gag gac gag cca agg aaa ccc gct ggc act ttg ttc Ala Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe 145 150 155	479
tct gga ggc agc atg gtg gcc gtg ccg tgc gcc aac tgc cat ctc cta Ser Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu 160 165 170 175	527
gtc atg ctg tgc aag tcc tcc ccg tcc tgc ccc aac tgc aag ttc gtg Val Met Leu Cys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val 180 185 190	575
cag cct ctg gca cct gct gtg ccg cct gcg gcg gtg gcc cat tgg agg Gln Pro Leu Ala Pro Ala Val Pro Ala Ala Val Ala His Trp Arg 195 200 205	623
atc gat gcc gcc gtc aag ccg ctg gag acc ctg agc ctt ctc cat tag Ile Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His 210 215 220	671
gcacatgcac ttcaccggca gcagattgta gaaaggaaat cgtagttacg tagtagtggt	731
gcatgggtta gtattactat tacctggta atgcattgagc ggtcgaatga aaattggaaa	791
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cctgattgat ccgcctgtcc tccgaggctt tcaccgcgcg gcttaatcc cgattgggtt	120
ggctggaccc caacccaatt gggggtaat tgggattgct actccgcggc tgcctgtccc	180

tcgtgttcct	ggattggcga	ggccaatcga	ctgggttgct	gcagcctcct	gggtagaatc	240
atg aag cta aaa aat	agc gca gtg gag	act ttt aag gag aac	aat atg			288
Met Lys Leu Lys	Asn Ser Ala Val	Glu Thr Phe	Lys Glu Asn Asn	Met		
1	5	10	15			
att ttc act tct gaa gga aat	ctc cac tct aaa aaa	atg cga gaa gat				336
Ile Phe Thr Ser	Glu Gly Asn Leu	His Ser Lys Lys	Met Arg Glu Asp			
20	25	30				
tat gtt gct agt cca aac caa ccg ggt	gct gtc cag aca aga tgc aaa					384
Tyr Val Ala Ser Pro Asn Gln Pro	Gly Ala Val Gln	Thr Arg Cys Lys				
35	40	45				
tgg ata att gga gat gta act gag	gtc ttt gat cgc agc aca tgg aag					432
Trp Ile Ile Gly Asp Val	Thr Glu Val Phe Asp Arg	Ser Thr Trp Lys				
50	55	60				
ctt gga aag atc tta aag atg cta aag aac tac ttt gtt atc agg						480
Leu Gly Lys Ile Leu Lys Met Leu Lys Asn Asn Tyr Phe Val Ile Arg						
65	70	75	80			
ctt gct gat tgc atc cag ctg aaa gag ttc cac ata tct agt ttg aga						528
Leu Ala Asp Cys Ile Gln Leu Lys Glu Phe His Ile Ser Ser Leu Arg						
85	90	95				
atc cca cgt ggt ctg gaa gct cct caa agc aag ccc ttt cat gca gca						576
Ile Pro Arg Gly Leu Glu Ala Pro Gln Ser Lys Pro Phe His Ala Ala						
100	105	110				
gat aag gcc acc gga cgc ggt aat cgt cga cct gct gat ggc gcc ttg						624
Asp Lys Ala Thr Gly Arg Gly Asn Arg Arg Pro Ala Asp Gly Ala Leu						
115	120	125				
ccc ggc gca agg gct gcg gat caa atg ggt cac cga gcc tac gag ctg						672
Pro Gly Ala Arg Ala Ala Asp Gln Met Gly His Arg Ala Tyr Glu Leu						
130	135	140				
ggg agc agc ggc aag aag cgg aaa gca acc gca gac gcc tct cac cat						720
Gly Ser Ser Gly Lys Lys Arg Lys Ala Thr Ala Asp Ala Ser His His						
145	150	155	160			
cta ggc aga gca gca gca cac tcc cgg aag gtc gcc gca gcc tcc						768
Leu Gly Arg Ala Ala Ala His Ser Arg Lys Val Ala Ala Ala Ser						
165	170	175				
aac ccg aac ggc ggc agc tac ccg cac agc tct tca cag gcc ata gaa						816
Asn Pro Asn Gly Gly Ser Tyr Pro His Ser Ser Ser Gln Ala Ile Glu						
180	185	190				
gac gcc gaa tgc tcg gtg gcc agc tgc agc gtg gac gac ctt tac cgc						864
Asp Ala Glu Cys Ser Val Ala Ser Cys Ser Val Asp Asp Leu Tyr Arg						
195	200	205				
ctc ggc aat ggc ggc aac gcc aag cgt cgc ccc gcc gcc gca ggg tgc						912
Leu Gly Asn Gly Gly Asn Ala Lys Arg Arg Pro Ala Ala Ala Gly Cys						

正曰「聖經」，聖經曰「聖經正曰」，聖經曰「聖經正曰」。

210	215	220	
ctc cct gac gac gcc atg tcc gcg tgc ccg tgc acg ccc ggg gcg agg			960
Leu Pro Asp Asp Ala Met Ser Ala Cys Pro Cys Thr Pro Gly Ala Arg			
225	230	235	240
gac ggg gag gac gac gcg gcg ggc gtg cac ggg ctg gag ctg gag			1008
Asp Gly Glu Asp Asp Ala Ala Gly Val His Gly Leu Glu Leu Glu			
245	250	255	
gcg tac ggg tcg act atg cgg gcg ctg tac gcg tcg ggg ccg ctg acg			1056
Ala Tyr Gly Ser Thr Met Arg Ala Leu Tyr Ala Ser Gly Pro Leu Thr			
260	265	270	
tgg gag cag gag gcg ctg ctg acg aac ctg cgc ctg tcg ctc aac atc			1104
Trp Glu Gln Glu Ala Leu Leu Thr Asn Leu Arg Leu Ser Leu Asn Ile			
275	280	285	
tcc aac gag gag cat ctg ctc cag ctc agg cgc cta ctg tcc tcg tga			1152
Ser Asn Glu Glu His Leu Leu Gln Leu Arg Arg Leu Leu Ser Ser			
290	295	300	
ttattggcac ttggcattgg cgcattgcca gccaccaccc ttctggcctt ctcttcgta			1212
cgtctccagc gtcgtcgctg gccaacggcc atgcacgtcg gcttggctcg cggAACGCCG			1272
cgttcagcga gcctcttgct ttactcttg ttgctaattg ctattacatg gttctctgtc			1332
tagtcttaggt agaaaagaatc ctatgttcat accagtgtcg agacatgtca tgccttttgt			1392
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tgg agt cat cgc cgc cgg gcc ggt cgc ggt cggt atc ccc ccg ctc cgc			96
Trp Ser His Arg Arg Ala Gly Arg Gly Arg Ile Pro Pro Leu Arg			
20	25	30	
ctc ctc tcc ttc gat tcg ttg ctt ccc gct tca aat cca agc cac cac			144
Leu Leu Ser Phe Asp Ser Leu Leu Pro Ala Ser Asn Pro Ser His His			
35	40	45	
cct ttc ctt ccc atg gct tcc gac gcc ccg gcg gag caa ccg gcg acg			

Pro Phe Leu Pro Met Ala Ser Asp Ala Pro Ala Glu Gln Pro Ala Thr			
50	55	60	
cag cag aag ccc acc agg gtc tcg tcc tat gag gag atc tcc aag			240
Gln Gln Lys Pro Thr Arg Val Ser Leu Ser Tyr Glu Glu Ile Ser Lys			
65	70	75	80
ctc ttc tcc ctc ccc atc gct gag gcg gcc tcc atc ctc gga gtc tgc			288
Leu Phe Ser Leu Pro Ile Ala Glu Ala Ala Ser Ile Leu Gly Val Cys			
85	90	95	
acc agt gtc ttg aag agg atc tgc cgc acc cac ggg att gtt agg tgg			336
Thr Ser Val Leu Lys Arg Ile Cys Arg Thr His Gly Ile Val Arg Trp			
100	105	110	
cca tat cgt aag ctt gtt tct ggg aaa gct ggg gat gac aca aaa ggt			384
Pro Tyr Arg Lys Leu Val Ser Gly Lys Ala Gly Asp Asp Thr Lys Gly			
115	120	125	
cct gat agc gac aaa gcc aac gaa ctc ctt gag gta tca aaa atc gcg			432
Pro Asp Ser Asp Lys Ala Asn Glu Leu Leu Glu Val Ser Lys Ile Ala			
130	135	140	
aaa caa aag gct ccc agt gca tca ggc cca tca gta gtg tca tca agc			480
Lys Gln Lys Ala Pro Ser Ala Ser Gly Pro Ser Val Val Ser Ser Ser			
145	150	155	160
act tcc caa gga gcg gca aag tct caa cag ggc aat tct aag gca gga			528
Thr Ser Gln Gly Ala Ala Lys Ser Gln Gly Asn Ser Lys Ala Gly			
165	170	175	
cag ttt tca gtt tcg cca cca aca ggt aaa cat aac gca tca cta agt			576
Gln Phe Ser Val Ser Pro Pro Thr Gly Lys His Asn Ala Ser Leu Ser			
180	185	190	
ttg acc cat agc caa gcc aag gcc atc cct tgc tat atg gat gat ttc			624
Leu Thr His Ser Gln Ala Lys Ala Ile Pro Cys Tyr Met Asp Asp Phe			
195	200	205	
aag tac gga ttc ccg tca tct ggc ttg tct tgt gaa act atg aaa tgg			672
Lys Tyr Gly Phe Pro Ser Ser Gly Leu Ser Cys Glu Thr Met Lys Trp			
210	215	220	
tgg ggc aca agc agc gac aca gac tat gtg cct acc aaa gat gga agc			720
Trp Gly Thr Ser Ser Asp Thr Asp Tyr Val Pro Thr Lys Asp Gly Ser			
225	230	235	240
cat gaa ccc cat gaa tca aca aca cat gag cca tca aag ggc atg act			768
His Glu Pro His Glu Ser Thr Thr His Glu Pro Ser Lys Gly Met Thr			
245	250	255	
gat gat gac gag ttg gac tgg gga gca gat gaa gcg gaa gct gaa gct			816
Asp Asp Asp Glu Leu Asp Trp Gly Ala Asp Glu Ala Glu Ala Glu Ala			
260	265	270	
gat ggc act gtt acg gca gag gca tcg gca cag ctg tgc tcg ctg aga			864
Asp Gly Thr Val Thr Ala Glu Ala Ser Ala Gln Leu Cys Ser Leu Arg			

0 1 2 3 4 5 6 7 8 9

275	280	285	
agg aaa gca gta gat gac ggg cgc aaa cta ttg aat ggt cac aac cgc			912
Arg Lys Ala Val Asp Asp Gly Arg Lys Leu Leu Asn Gly His Asn Arg			
290	295	300	
agg ggc caa gaa ttc tct agg ctg aac aaa agg cag aag aca gcg cta			960
Arg Gly Gln Glu Phe Ser Arg Leu Asn Lys Arg Gln Lys Thr Ala Leu			
305	310	315	320
gcc cag gta ttt ggg gct tca ctg cca gaa tgt tgt att act cgt gtc			1008
Ala Gln Val Phe Gly Ala Ser Leu Pro Glu Cys Cys Ile Thr Arg Val			
325	330	335	
tag tgagtgaaga acaactgttag ctgtgttttc ctccttctc cagaccctca			1061
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gat gcc ctg ggg cga aaa ttt acc cgc ttt gga cat caa gcc aag gaa			95
Asp Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu			
20 25 30			
gac agg cag gcc gcc att ttc cgg tct gag aat ggg aac gta tgg cag			143
Asp Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln			
35 40 45			
gta aaa atc ttt ggt gaa gac aag acg ggc aag cgg tca ggg cag tat			191
Val Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr			
50 55 60			
cta gca ccg aca ggc ata ggg gac gtg ccc tat ctg cca aca att ccc			239
Leu Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro			
65 70 75			
cgc cgg atc att ttg gcg atc gcc gaa aag cat ggg gtc aaa cca ccg			287
Arg Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro			
80 85 90 95			
gaa gat ggt caa gat ttt tgg ccc tgg ttt gtg gat cat cct gag att			335

Glu Asp Gly Gln Asp Phe Trp Pro Trp Phe Val Asp His Pro Glu Ile
 100 105 110
 ccc ttg att gtg acg gaa ggg ggg aag aaa gct tta gcc gcc atc agc 383
 Pro Leu Ile Val Thr Glu Gly Gly Lys Lys Ala Leu Ala Ala Ile Ser
 115 120 125
 caa ggt tac gtg gcc ctg agt ctc tat ggc tgt tta tgt ggc aac gat 431
 Gln Gly Tyr Val Ala Leu Ser Leu Tyr Gly Cys Leu Cys Gly Asn Asp
 130 135 140
 ggt cta acc atc aaa ccg tca tta ttg ccc tat gtg cag ggg cga gaa 479
 Gly Leu Thr Ile Lys Pro Ser Leu Leu Pro Tyr Val Gln Gly Arg Glu
 145 150 155
 gta gcg atc gcc tat gac cag gat gca aag ggt agc aag gga cga aag 527
 Val Ala Ile Ala Tyr Asp Gln Asp Ala Lys Gly Ser Lys Gly Arg Lys
 160 165 170 175
 gca gtc ttt aag ggc aca aaa ccg ctg gct cgt aac ctg acc tat cac 575
 Ala Val Phe Lys Gly Thr Lys Arg Leu Ala Arg Asn Leu Thr Tyr His
 180 185 190
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 His Ala Ala Leu Ala Ser Ala Asp Ala Met Val Ala Val His Gly Ala
 20 25 30
 gcc gtc acc cac ttc ctc ttc atg cgc ccg ggc tcc gtg ctc ctc cag 144
 Ala Val Thr His Phe Leu Phe Met Arg Pro Gly Ser Val Leu Leu Gln
 35 40 45
 gtc gtg ccc gtg ggg ctc gac tgg gcg gcc gac gcc ttc tac ggc aag 192
 Val Val Pro Val Gly Leu Asp Trp Ala Ala Asp Ala Phe Tyr Gly Lys
 50 55 60
 ccc gcg cag cag ctc ggc ctc gag tac ctc gag tac aag gtg gcg ccc 240
 Pro Ala Gln Gln Leu Gly Leu Glu Tyr Leu Glu Tyr Lys Val Ala Pro

65	70	75	80
gag gag agc tcg ctg gcc gag tac ggc ctc gac agc acc gtt ctg Glu Glu Ser Ser Leu Ala Ala Glu Tyr Gly Leu Asp Ser Thr Val Leu	85	90	95
agg aac ccc tgg gtg atc agc agc cgc ggc tgg tgg gag atg aag aaa Arg Asn Pro Trp Val Ile Ser Ser Arg Gly Trp Trp Glu Met Lys Lys	100	105	110
gtg tac atg gac cgc cag aac gtc acc gtt aac atc aag cgg ttc ggc Val Tyr Met Asp Arg Gln Asn Val Thr Val Asn Ile Lys Arg Phe Gly	115	120	125
gag cta ctc agg acg gcg cg ^g acg cac ctc aag aac acc acg gcg tgc Glu Leu Leu Arg Thr Ala Arg Thr His Leu Lys Asn Thr Ala Cys	130	135	140
gcc gcc gcc gcg ctg agg tag aagatgctag ttgagcttgg tcaggtgcta Ala Ala Ala Ala Leu Arg	145	150	1486
atgacttagt catacttgtc aatttctttg tg ^{ttt} cg ^{tc} gagatcctgt aaatatgatt gggttggttc ttttggtcga gagattggtg gggatcgatc gccttcttct acagtgcatt			546
cgttggttc atggtgttgc tagagcagaa gcagatgaag aatagttat ggcaggggca gctgtcctca aacaccttgt tcacactagt tcataggggt agcagctctt tttat ^{ttt} ctc			606
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cct cag tca agt gag agg cca ctg act gcc aca agc agt ttc agt tct Pro Gln Ser Ser Glu Arg Pro Leu Thr Ala Thr Ser Ser Phe Ser Ser	20	25	30
95			
gca tcc cca ttt tca gaa tca agc cag tta gct tca tct agt aaa caa Ala Ser Pro Phe Ser Glu Ser Ser Gln Leu Ala Ser Ser Ser Lys Gln	35	40	45
143			

cca gcc cca tat cta cct cgc aac cat atg ggc agg cgg tct ttc atg	50	55	60	191
Pro Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met				
tct aaa cca gtc tac cca ctt gtc ttc cgg aat cct gtc tca gaa tca	65	70	75	239
Ser Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser				
gaa gcg tgc agg atg ctt gag gtt aat gcc ggg cga gcg aca cca	80	85	90	287
Glu Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro				
agt gat gac agc caa gct tct cct ctg tgg cgt cgc agc ttg gcg agc	100	105	110	335
Ser Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser				
cca gat ctc aag ttc cac aat gca ccg aat gaa ctt ggg aag atg gaa	115	120	125	383
Pro Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu				
acc tca ccc gaa ccg aac aca agc tca aga agg gaa ggg ttc aga tgg	130	135	140	431
Thr Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp				
agc aac gcc agc agt tat gac ttt gga tac gat gga gat gcc att gac	145	150	155	479
Ser Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp				
att tca gat cat atc agc atc gag tcc cag aga tct ccc acg agc tca	160	165	170	527
Ile Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser				
gcg agg ttc ctg aag tgt ggg ctg tgc gag aga ttc ctg cac cag aaa	180	185	190	575
Ala Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys				
tca ccc tgg acc tcg aac agg att gtt cga aac gcc gac atg cca gtg	195	200	205	623
Ser Pro Trp Thr Ser Asn Arg Ile Val Arg Asn Ala Asp Met Pro Val				
gca gca gtt ctg cct tgc cga cat gtc ttc cac gcg gat tgc ttg gag	210	215	220	671
Ala Ala Val Leu Pro Cys Arg His Val Phe His Ala Asp Cys Leu Glu				
gaa agc act gcc aag aca gaa gtc cat gaa cca cct tgc ccc ctg tgc	225	230	235	719
Glu Ser Thr Ala Lys Thr Glu Val His Glu Pro Pro Cys Pro Leu Cys				
gcg cga gcc act gac gat gaa ggg cac gtg tgc ttc tca gaa cct ctg	240	245	250	767
Ala Arg Ala Thr Asp Asp Glu Gly His Val Ser Phe Ser Glu Pro Leu				
cat gtt gcc ctc cga tct gct cgc agg aac ctt tcg ttg ggc act ggt	260	265	270	815
His Val Ala Leu Arg Ser Ala Arg Arg Asn Leu Ser Leu Gly Thr Gly				

Zea mays

gct ggt ggg aac agc ggc att tct gac cct cct cgc act gat cgt ggc	863		
Ala Gly Gly Asn Ser Gly Ile Ser Asp Pro Pro Arg Thr Asp Arg Gly			
275	280	285	
ttg aag agg aac aac tct gca gtc atg cct agg cgc agc ggc ggc gca	911		
Leu Lys Arg Asn Asn Ser Ala Val Met Pro Arg Arg Ser Gly Gly Ala			
290	295	300	
ttg ttc cgc aat cgc ttc aag aaa cag ttc ccc ttc aaa gcg agg atc	959		
Leu Phe Arg Asn Arg Phe Lys Lys Gln Phe Pro Phe Lys Ala Arg Ile			
305	310	315	
ggg aag gag ctc ttt ggc ggt agg gtt ctc aac aag gtt gga ttg tct	1007		
Gly Lys Glu Leu Phe Gly Arg Val Leu Asn Lys Val Gly Leu Ser			
320	325	330	335
ttg tct tca ggt cag cat gat gat cat cga cag caa gcg cca aag cat	1055		
Leu Ser Ser Gly Gln His Asp Asp His Arg Gln Gln Ala Pro Lys His			
340	345	350	
gac cgg ccc atg aag tag ctagatctta gtggcacaga gtataatatg	1103		
Asp Arg Pro Met Lys			
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tataacctcg gggcgccgc agcatgcgtc ttaacgaagg ataaagacct gctaag atg	119		
Met			
1			
gcc atg gcc atg gcc agg ttc ctc tcg tgg ttg ttc aca tgc ttc gca	167		
Ala Met Ala Met Ala Arg Phe Leu Ser Trp Leu Phe Thr Cys Phe Ala			
5	10	15	
gct ctc gcc gtc ctg gag gcc acg gtc cct gct cgt tca tgg cgc gct	215		
Ala Leu Ala Val Leu Glu Ala Thr Val Pro Ala Arg Ser Trp Arg Ala			
20	25	30	

ccg agt ccc acc ccg agg cac gaa gcg agg agg ttc gag cag aag acg	263
Pro Ser Pro Thr Pro Arg His Glu Ala Arg Arg Phe Glu Gln Lys Thr	
35 40 45	
gac agg ttc tgg gag tac cag gag cag agc aat acc tgg gta caa gta	311
Asp Arg Phe Trp Glu Tyr Gln Glu Gln Ser Asn Thr Trp Val Gln Val	
50 55 60 65	
cgc gcg ccg ttc gac ctc atg tcc tgc atc aac ggc acc tgc aca aag	359
Arg Ala Pro Phe Asp Leu Met Ser Cys Ile Asn Gly Thr Cys Thr Lys	
70 75 80	
gta gga tcg atc ggg cgg ctg gcg agg gag cct gga cga cac ggc ctt	407
Val Gly Ser Ile Gly Arg Leu Ala Arg Glu Pro Gly Arg His Gly Leu	
85 90 95	
cct ccc gtc cag agc cag gag gag gag gaa gac acg cgg cgg gtt	455
Pro Pro Val Gln Ser Gln Glu Glu Glu Asp Thr Arg Arg Val	
100 105 110	
cag gga gat ggt gca gaa gaa gac cct gtc ctg cct gta agg agg aga	503
Gln Gly Asp Gly Ala Glu Glu Asp Pro Val Leu Pro Val Arg Arg Arg	
115 120 125	
att tcc ttg aca aga atg tca gag tcg tca gtc tgg gtg aca ggg cag	551
Ile Ser Leu Thr Arg Met Ser Glu Ser Ser Val Trp Val Thr Gly Gln	
130 135 140 145	
agc ggc tcc atc tac gag agg ttc tgg aac ggg gtg gtg tgg gtg att	599
Ser Gly Ser Ile Tyr Glu Arg Phe Trp Asn Gly Val Val Trp Val Ile	
150 155 160	
gct cct cat gag ctc cct gcc tcg gct ggg tat gcc acc gca act ttc	647
Ala Pro His Glu Leu Pro Ala Ser Ala Gly Tyr Ala Thr Ala Thr Phe	
165 170 175	
att gtc aat aca act atc ctt gct ctg tct gaa gct gga acc ctc tac	695
Ile Val Asn Thr Thr Ile Leu Ala Leu Ser Glu Ala Gly Thr Leu Tyr	
180 185 190	
cag ttg cag cta aat gag cat gcc cag cct atc tgg aca gag atg gca	743
Gln Leu Gln Leu Asn Glu His Ala Gln Pro Ile Trp Thr Glu Met Ala	
195 200 205	
ttc aac tca agc cag cag tca gcg aat ctt gga tta aaa aca caa agt	791
Phe Asn Ser Ser Gln Gln Ser Ala Asn Leu Gly Leu Lys Thr Gln Ser	
210 215 220 225	
caa gct atg cgt ata aga aat ggg att gta tcc aat gat gga agg aaa	839
Gln Ala Met Arg Ile Arg Asn Gly Ile Val Ser Asn Asp Gly Arg Lys	
230 235 240	
ctt ttc ctg tct atc atg aat gga tcc ctg ctt gag gta aca gaa att	887
Leu Phe Leu Ser Ile Met Asn Gly Ser Leu Leu Glu Val Thr Glu Ile	
245 250 255	

cag cct cta agg tgg aat tac cat ggg cgt cct cca ggt gca gac gtg Gln Pro Leu Arg Trp Asn Tyr His Gly Arg Pro Pro Gly Ala Asp Val 260 265 270	935
tcg tat ata tct gat gct gga aat ctg cgg cca ggg acc ctg ttc aca Ser Tyr Ile Ser Asp Ala Gly Asn Leu Arg Pro Gly Thr Leu Phe Thr 275 280 285	983
gta agt tcc act gga gac ctc tat gag ttt gac aaa gaa aca aag cca Val Ser Ser Thr Gly Asp Leu Tyr Glu Phe Asp Lys Glu Thr Lys Pro 290 295 300 305	1031
tca tgg aaa aag cat ata tgg agt gaa gaa ctg gcg aaa aat atc tca Ser Trp Lys Lys His Ile Trp Ser Glu Glu Leu Ala Lys Asn Ile Ser 310 315 320	1079
tta aaa tca tcg gct ggc ttt gct ttg cat ggt ttg tca ggg tct aac Leu Lys Ser Ser Ala Gly Phe Ala Leu His Gly Leu Ser Gly Ser Asn 325 330 335	1127
tca gtg tct ctt ttc ctg ata agc aag gat ggc ctt tta gtg gag cgg Ser Val Ser Leu Phe Leu Ile Ser Lys Asp Gly Leu Leu Val Glu Arg 340 345 350	1175
cgc ttg cat aga agg aag tgg aag tgg gac aaa cat gga gct cct acg Arg Leu His Arg Arg Lys Trp Lys Trp Asp Lys His Gly Ala Pro Thr 355 360 365	1223
ggt cag aga ctt agt tca att gca gaa gtt cag aag gat gaa ctt aat Gly Gln Arg Leu Ser Ser Ile Ala Glu Val Gln Lys Asp Glu Leu Asn 370 375 380 385	1271
gat gcg act tca atg ttt tta acg aca acc aca gga aaa gta tat gag Asp Ala Thr Ser Met Phe Leu Thr Thr Thr Gly Lys Val Tyr Glu 390 395 400	1319
tat cag ttt cca aaa tat aca ggt ggg gcc cag agc aat aag ata aga Tyr Gln Phe Pro Lys Tyr Thr Gly Ala Gln Ser Asn Lys Ile Arg 405 410 415	1367
gga caa tgg ata aat cac atg tcc cct gag cat gca aag gtt gca aga Gly Gln Trp Ile Asn His Met Ser Pro Glu His Ala Lys Val Ala Arg 420 425 430	1415
aac gtc cca ggt gta cat gtt caa gtc ggc aga atg gta ttc cca cta Asn Val Pro Gly Val His Val Gln Val Gly Arg Met Val Phe Pro Leu 435 440 445	1463
gat gat ggt agg ctt ggg gaa cta cat ttt cct ggg atg ggg ggt act Asp Asp Gly Arg Leu Gly Glu Leu His Phe Pro Gly Met Gly Gly Thr 450 455 460 465	1511
gat ttt ggt ccg agt gcc caa agt acc ata aga aga aaa cta tca aac Asp Phe Gly Pro Ser Ala Gln Ser Thr Ile Arg Arg Lys Leu Ser Asn 470 475 480	1559
aag tac gag tgg tcc atc cta gac gca cca gaa aca gaa ggt tgg aat	1607

EQUUS HYPERDRAFT

Lys Tyr Glu Trp Ser Ile Leu Asp Ala Pro Glu Thr Glu Gly Trp Asn		
485	490	495
gca gaa tat tgc acc gaa gag cac ggt ccg aca aat tgt att agt gga		1655
Ala Glu Tyr Cys Thr Glu Glu His Gly Pro Thr Asn Cys Ile Ser Gly		
500	505	510
gca aag aat ata gct gca gac aca gaa tca aat gac ttg agc aat aac		1703
Ala Lys Asn Ile Ala Ala Asp Thr Glu Ser Asn Asp Leu Ser Asn Asn		
515	520	525
cca cct tcc agg agg cgt aaa gta gaa gag aag cag cac tac cta aat		1751
Pro Pro Ser Arg Arg Arg Lys Val Glu Glu Lys Gln His Tyr Leu Asn		
530	535	540
545		
gtt aac aga tac cag cag agt gat gaa act gaa tca tac aac ttt cta		1799
Val Asn Arg Tyr Gln Gln Ser Asp Glu Thr Glu Ser Tyr Asn Phe Leu		
550	555	560
tca agg acc att gat ctt aac ttc cac atg cgg gtg atg cat gca gac		1847
Ser Arg Thr Ile Asp Leu Asn Phe His Met Arg Val Met His Ala Asp		
565	570	575
aga tcg ctt ttc ctt ata gca gac aat gga ttg act ttt gaa tat cta		1895
Arg Ser Leu Phe Leu Ile Ala Asp Asn Gly Leu Thr Phe Glu Tyr Leu		
580	585	590
aac agc aat ggt gtt tgg ttg tgg tta aga cat gaa cat gtt aca gcc		1943
Asn Ser Asn Gly Val Trp Leu Trp Leu Arg His Glu His Val Thr Ala		
595	600	605
atg aaa gga aca cta gga agc tac aat ggc agt ttg tat ctt gtc gac		1991
Met Lys Gly Thr Leu Gly Ser Tyr Asn Gly Ser Leu Tyr Leu Val Asp		
610	615	620
625		
gtg cat ggg aac tta cac att aga gaa aga aat gga gat gaa ctg ttg		2039
Val His Gly Asn Leu His Ile Arg Glu Arg Asn Gly Asp Glu Leu Leu		
630	635	640
tgg att aac tgc aca gcg atg aag aag gga aga cag gtt gca agt ggg		2087
Trp Ile Asn Cys Thr Ala Met Lys Lys Gly Arg Gln Val Ala Ser Gly		
645	650	655
tct cca tgg gat ggc atc cct ggt tta ttg cgc aga gtg aca aca gat		2135
Ser Pro Trp Asp Gly Ile Pro Gly Leu Leu Arg Arg Val Thr Thr Asp		
660	665	670
gat gca ctc ttc ttt gtc aac aag cga ggc agg ctg cta cag ttc acg		2183
Asp Ala Leu Phe Phe Val Asn Lys Arg Gly Arg Leu Leu Gln Phe Thr		
675	680	685
gtt gcg ctg cgg aaa ttc aag tgg aag gac tgc cac agt cct cct gac		2231
Val Ala Leu Arg Lys Phe Lys Trp Lys Asp Cys His Ser Pro Pro Asp		
690	695	700
705		
acc aag att gct ttc ata gtg gac cag gag gtc ttc aga aga aac atc		2279
Thr Lys Ile Ala Phe Ile Val Asp Gln Glu Val Phe Arg Arg Asn Ile		

710	715	720	
atc ttc gtg gta ggc cgc aac ggt cgc ctc tac cag tac aac agg atc Ile Phe Val Val Gly Arg Asn Gly Arg Leu Tyr Gln Tyr Asn Arg Ile	730	735	2327
725			
acg gag ctc tgg cac agg cac tac caa tca cct cac ctg ttc cta tcg Thr Glu Leu Trp His Arg His Tyr Gln Ser Pro His Leu Phe Leu Ser	745	750	2375
740			
tgc tcc cca ggg acg gcc atg cgg cca tcg ccg ctg tcc ctg gcc ggc Cys Ser Pro Gly Thr Ala Met Arg Pro Ser Pro Leu Ser Leu Ala Gly	760	765	2423
755			
tcc ctg ttc atg gtg tcc gag cac ggg ggg ctg gtg gag tac cac ttc Ser Leu Phe Met Val Ser Glu His Gly Gly Leu Val Glu Tyr His Phe	775	780	2471
770			
785			
agc cca cag gac ggg tgg gag tgg gta gag cac ggg acg ccc cac cgg Ser Pro Gln Asp Gly Trp Glu Trp Val Glu His Gly Thr Pro His Arg	790	795	2519
800			
ggc gtg acc ctc gtc ggc gcc cct ggc ccg tgc ttc gac ggc tcc cag Gly Val Thr Leu Val Gly Ala Pro Gly Pro Cys Phe Asp Gly Ser Gln	805	810	2567
815			
ctg ttc gtg gtc ggc tcc gac ggg cac gtg tac cgg cgg cac atg gag Leu Phe Val Val Gly Ser Asp Gly His Val Tyr Arg Arg His Met Glu	820	825	2615
830			
ggg agg acg tgg agg tgg acg agc cac ggg cac ccg ccg tcg gag ccg Gly Arg Thr Trp Arg Trp Thr Ser His Gly His Pro Pro Ser Glu Pro	835	840	2663
845			
gcc gcc gtt gac gaa cag agc tgc gcc aca ccg gac acg ggc gcc ggc Ala Ala Val Asp Glu Gln Ser Cys Ala Thr Pro Asp Thr Gly Ala Gly	850	855	2711
860			
865			
gca cac tac gcc gac ggg ttc agg ggg agc tgc gac ggg aag gtg gca Ala His Tyr Ala Asp Gly Phe Arg Gly Ser Cys Asp Gly Lys Val Ala	870	875	2759
880			
gcc gtg cgg ccg gtg ccg ttc tcg gag gac gcc gtg gtc ttc gag ctg Ala Val Arg Pro Val Pro Phe Ser Glu Asp Ala Val Val Phe Glu Leu	885	890	2807
895			
cga gat ggc cgg ctg gcg gag ctg cgg cgg ccg ccc tcc gcg gac ggg Arg Asp Gly Arg Leu Ala Glu Leu Arg Arg Pro Pro Ser Ala Asp Gly	900	905	2855
910			
tgc ggc ggg tgg gag tgg gcg cgg att atc ggc acg ccg gcc agc gcc Cys Gly Gly Trp Glu Trp Ala Arg Ile Ile Gly Thr Pro Ala Ser Ala	915	920	2903
925			
tgt atg acc agc tac tgg acg gcc gtc gcc acg tag ccgcgcgcgg Cys Met Thr Ser Tyr Trp Thr Ala Val Ala Thr	930	935	2949
940			

ggcgcactca cggagctggc agtccgctgg tcgctggct gattgaggc tccttggaa 3009
 ttggaaatga tccacaacaa cagcggtcac gtccatgttt cctcgaaaga cggccacgtc 3069
 cacatgggtc taggcccgtat gatggccaga tttgggcgcc caaagaaagg cagaaaggaa 3129
 ctctctcgaa aaaaaaaaaacg gctaaccgtt acattacatt tgattgtctg tttggtaatg 3189
 catttttaga atactatagt tttaaagcat atagtaactat agtttacaat tgtatataac 3249
 ataagtatta caatattatt ttaccacagt aaaattata tag tatttctt 3297

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 His Ala Ser Gly Thr Met Glu Ile Gly Leu Arg Gly Pro Thr Asn Leu
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ttt gga cat cca act gac aag cag atg att gaa ttg gat caa gca tta 97
 Phe Gly His Pro Thr Asp Lys Gln Met Ile Glu Leu Asp Gln Ala Leu
 20 25 30

tca cag tgg aat act gac ttt gac aag gtt cca gtg aca aaa atc gca 145
 Ser Gln Trp Asn Thr Asp Phe Asp Lys Val Pro Val Thr Lys Ile Ala
 35 40 45

ttt ggg cac ttc ccg ttg tct ttc tca gca tta aca gag tca gga aaa 193
 Phe Gly His Phe Pro Leu Ser Phe Ser Ala Leu Thr Glu Ser Gly Lys
 50 55 60

agt atc aag gat gtt ttt cta aag caa tca ttg gca gca tat ttg tgt 241
 Ser Ile Lys Asp Val Phe Leu Lys Gln Ser Leu Ala Ala Tyr Leu Cys
 65 70 75 80

ggt cat ctt cat aca agg ttc ggg aag aac ttg aaa cga tac tac cat 289
 Gly His Leu His Thr Arg Phe Gly Lys Asn Leu Lys Arg Tyr Tyr His
 85 90 95

cg gca gtc cag gaa tca tca tta tca gag cat tac tac caa cat aac 337
 Arg Ala Val Gln Glu Ser Ser Leu Ser Glu His Tyr Tyr Gln His Asn
 100 105 110

atg cac caa gga gat gca ttc cag ggt aat aag gaa aac tgt tct gaa 385
 Met His Gln Gly Asp Ala Phe Gln Gly Asn Lys Glu Asn Cys Ser Glu
 115 120 125

gaa gct tct cat att gaa gag ttc tgg gaa tgg gag atg ggt gat tgg			433
Glu Ala Ser His Ile Glu Glu Phe Trp Glu Trp Glu Met Gly Asp Trp			
130	135	140	
aga aag agc aga agc atg agg ata cta gca att gat gat ggt tat gtt			481
Arg Lys Ser Arg Ser Met Arg Ile Leu Ala Ile Asp Asp Gly Tyr Val			
145	150	155	160
tcc tat acc gat ata gat ttc aga tta ggt tca aag agc ata atc ata			529
Ser Tyr Thr Asp Ile Asp Phe Arg Leu Gly Ser Lys Ser Ile Ile Ile			
165	170	175	
cta cct acc ttt ccc ctt gat tca aga ttc atg cag aga gcc tct gct			577
Leu Pro Thr Phe Pro Leu Asp Ser Arg Phe Met Gln Arg Ala Ser Ala			
180	185	190	
ttt cgt gat ttt aaa tgt cat gtc atg ggg gca tca tct ttt gat acc			625
Phe Arg Asp Phe Lys Cys His Val Met Gly Ala Ser Ser Phe Asp Thr			
195	200	205	
gtg aga gct ctt gta ttc tct aaa cat gag ata ata tct gtt tct gta			673
Val Arg Ala Leu Val Phe Ser Lys His Glu Ile Ile Ser Val Ser Val			
210	215	220	
aaa ata tac gac tca agg cca gga act ctt gaa ata gtc ttt gac tct			721
Lys Ile Tyr Asp Ser Arg Pro Gly Thr Leu Glu Ile Val Phe Asp Ser			
225	230	235	240
gaa atg aaa aga gtg gat tcc aat gaa act cga gga aat atg tat ttg			769
Glu Met Lys Arg Val Asp Ser Asn Glu Thr Arg Gly Asn Met Tyr Leu			
245	250	255	
ata cca tgg aac tgg agg gca ttt gaa gat tcc tct ccc agc cga tat			817
Ile Pro Trp Asn Trp Arg Ala Phe Glu Asp Ser Ser Pro Ser Arg Tyr			
260	265	270	
tgg ctc caa att gaa gtg atg gat ata aca ggt gac aca agt gtc agc			865
Trp Leu Gln Ile Glu Val Met Asp Ile Thr Gly Asp Thr Ser Val Ser			
275	280	285	
cag ttg agg cca ttc tct gtt aac ggc ttg ccg gca aga gtg aac tgg			913
Gln Leu Arg Pro Phe Ser Val Asn Gly Leu Pro Ala Arg Val Asn Trp			
290	295	300	
aca tgg aaa gag ttt ttt gtg att ggt att cag tgg gct tca ata tat			961
Thr Trp Lys Glu Phe Phe Val Ile Gly Ile Gln Trp Ala Ser Ile Tyr			
305	310	315	320
cat cct gca ctg tgg tgt gcc ttt tct cta atc ttt tcg ttg ctt ctt			1009
His Pro Ala Leu Trp Cys Ala Phe Ser Leu Ile Phe Ser Leu Leu Leu			
325	330	335	
gta cca caa gtt tta gca gtg gta ttc aaa gat cgg ttc aca tat aaa			1057
Val Pro Gln Val Leu Ala Val Val Phe Lys Asp Arg Phe Thr Tyr Lys			
340	345	350	
tct cta tgc gca tat ggt ggg cag agg aca ctg ttg aag tct cta gtt			1105

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Ser	Leu	Cys	Ala	Tyr	Gly	Gly	Gln	Arg	Thr	Leu	Leu	Lys	Ser	Leu	Val	
355					360				365							
ggt	ggt	ttc	atc	tgt	tgt	ttt	gtt	gaa	ctc	tcc	agg	ctg	gtt	ctt	gta	1153
Gly	Gly	Phe	Ile	Cys	Cys	Phe	Val	Glu	Leu	Ser	Arg	Leu	Val	Leu	Val	
370				375					380							
tgg	tta	ttg	cta	ctg	tta	tat	gct	atc	tat	tta	gtt	ttt	ata	cct	tgg	1201
Trp	Leu	Leu	Leu	Leu	Tyr	Ala	Ile	Tyr	Leu	Val	Phe	Ile	Pro	Trp		
385				390					395			400				
tta	ttc	ggt	cac	cct	att	act	gaa	gat	ggt	agc	ctg	act	tac	atg	aca	1249
Leu	Phe	Gly	His	Pro	Ile	Thr	Glu	Asp	Gly	Ser	Leu	Thr	Tyr	Met	Thr	
					405				410				415			
cat	aaa	ggc	tgg	att	cta	aaa	gga	ccc	agt	agt	agc	aac	gaa	gta	gtc	1297
His	Lys	Gly	Trp	Ile	Leu	Lys	Gly	Pro	Ser	Ser	Ser	Asn	Glu	Val	Val	
					420			425				430				
cat	gct	ggg	att	cca	gat	gtc	atg	gtc	att	gtt	cta	cct	cac	ctt	tgc	1345
His	Ala	Gly	Ile	Pro	Asp	Val	Met	Val	Ile	Val	Leu	Pro	His	Leu	Cys	
					435			440				445				
ttt	gtg	tta	gta	ccc	acc	att	gtg	att	tta	gct	gcc	atg	gct	gct	gag	1393
Phe	Val	Leu	Val	Pro	Thr	Ile	Val	Ile	Leu	Ala	Ala	Met	Ala	Ala	Glu	
					450			455				460				
aga	aca	gca	tat	cga	gag	cat	tat	ctt	tct	cga	tca	gga	aag	aag	aaa	1441
Arg	Thr	Ala	Tyr	Arg	Glu	His	Tyr	Leu	Ser	Arg	Ser	Gly	Lys	Lys	Lys	
					465			470			475			480		
gat	gac	tac	cgt	aag	agc	agg	aca	cag	ata	gaa	cat	gaa	aac	ttt	tgg	1489
Asp	Asp	Tyr	Arg	Lys	Ser	Arg	Thr	Gln	Ile	Glu	His	Glu	Asn	Phe	Trp	
					485				490				495			
aac	ggt	cgc	tgg	att	agc	aaa	ttt	ctg	tgt	ctt	ctc	tgc	gtg	gtg	gtt	1537
Asn	Gly	Arg	Trp	Ile	Ser	Lys	Phe	Leu	Cys	Leu	Leu	Cys	Val	Val	Val	
					500				505				510			
cta	tgc	aaa	cat	tgg	aag	ctt	tgc	aga	gcg	ctc	gtg	aag	gct	tat	gct	1585
Leu	Cys	Lys	His	Trp	Lys	Leu	Cys	Arg	Ala	Leu	Val	Lys	Ala	Tyr	Ala	
					515			520				525				
atg	aac	ccc	ttg	ctc	cat	gcg	cca	gta	ctt	ttc	ttc	ttc	gtt	cct	tta	1633
Met	Asn	Pro	Leu	Leu	His	Ala	Pro	Val	Leu	Phe	Phe	Phe	Val	Pro	Leu	
					530			535				540				
ctc	atg	gtg	ttt	gcc	atc	tac	aag	aca	cgg	tcc	att	tag	ctgttcggga		1682	
Leu	Met	Val	Phe	Ala	Ile	Tyr	Lys	Thr	Arg	Ser	Ile					
					545			550			555					
gttctgaaga	tgtgctgcac	tggactgtcc	aataaatggt	gctccaaactg	tgaagactga										1742	
agactaaccc	acaactgaag	gtgtgctact	tcgatttctc	aatttctctc	tttcagagag										1802	
cagatttgtt	agattgttta	acaggcatat	atagcttca	gcattgcgct	ccgtataaat										1862	

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 gactaaactg ctcaatatag ttttcctct ttctttgag aaagttctt ttccagctc 1982
 tttttgac ctgccggctt tgttttcta cattatcct tcttgaga ctttgaccat 2042
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 aactccacaa gatctagaac ctaagaacct gcagaggaga ggaagaggag cttggggagg 180
 ag atg gcc ggc gcc gag ggc gag agg tgg gtg ggg cta gca acg gac 227
 Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp
 1 5 10 15
 ttc tcg gag ggg agc cgg gcg ctg cgg tgg gcg gcg gcc aac ctg 275
 Phe Ser Glu Gly Ser Arg Ala Ala Leu Arg Trp Ala Ala Asn Leu
 20 25 30
 ctg cga gcc ggc gac cac ctg ctg ctg cac gtc atc aag gag ccc 323
 Leu Arg Ala Gly Asp His Leu Leu Leu His Val Ile Lys Glu Pro
 35 40 45
 gac tac gag cag agc gag gcc atc ctc tgg gaa tcc acc ggc tcc ccg 371
 Asp Tyr Glu Gln Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro
 50 55 60
 ttg att ccc ctc tcg gaa ttc tct gac cct atc att gcg aag aaa tat 419
 Leu Ile Pro Leu Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr
 65 70 75
 gga gca aag ccg gac ata gaa acc ttg gac atc ctg aac act aca gct 467
 Gly Ala Lys Pro Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala
 80 85 90 95
 acc cag aag gat atc gtg gtg gtt gtg aaa gtc ctg tgg ggt gat ccg 515
 Thr Gln Lys Asp Ile Val Val Val Lys Val Leu Trp Gly Asp Pro
 100 105 110
 cgt gag aag ctc tgt caa gtt atc cat gat acc ccg ctg agc tgc ttg 563

Arg Glu Lys Leu Cys Gln Val Ile His Asp Thr Pro Leu Ser Cys Leu
 115 120 125

gtt ata gga agc agg ggc ctt ggc aag ctc aag agg gtg ctc ttg gga 611
 Val Ile Gly Ser Arg Gly Leu Gly Lys Leu Lys Arg Val Leu Leu Gly
 130 135 140

agt gtc agc gac tat gtt gtg aac aat gca acc tgc cct gtc acc gtc 659
 Ser Val Ser Asp Tyr Val Val Asn Asn Ala Thr Cys Pro Val Thr Val
 145 150 155

gtc aag tca aca agc acc gaa ggt tga tcttatcgcc gagatgcctg 706
 Val Lys Ser Thr Ser Thr Glu Gly
 160 165

gatgtgatgt tgtaataaag atgggtggcc tcatgtaaagaa catgcactag tttcttagcta 766
 tttgaaacat gttgaacgag gcaattctaa tgtaataata atagacaaag tgccttatga 826
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aagatgtgga tcc 899

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DRAFT

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tct act acc gga att gtc tat ttg ccc cat cca gac cgg aac cag gc	718																																																																																																				
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225	230	235		<210> 40		<211> 1866		<212> DNA		<213> Zea mays		<220>		<221> CDS		<222> (1) .. (969)		<400> 40		cca cgc gtc cgg gtt ccc ctc cac agg atg tcc gac ccc gcc gct gga	48	Pro Arg Val Arg Val Pro Leu His Arg Met Ser Asp Pro Ala Ala Gly		1	5	10	15	ggc gcc atg gtt cct gct gcc gga cgc ggc atc gca tgg gcg aac ggc	96	Gly Ala Met Val Pro Ala Ala Gly Arg Gly Ile Ala Trp Ala Asn Gly		20	25	30		ggc ccc cgg ttc ggc gac atg gtc tgg gcc aag gtg aag tcc cat ccg	144	Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro		35	40	45		tgg tgg cct ggc cat atc tac agc gtc agc ctc acc gac gag gag	192	Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu		50	55	60		gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240	Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly		65	70	75	80	gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																								
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Pro Arg Val Arg Val Pro Leu His Arg Met Ser Asp Pro Ala Ala Gly																																																																																																					
1	5	10	15	ggc gcc atg gtt cct gct gcc gga cgc ggc atc gca tgg gcg aac ggc	96	Gly Ala Met Val Pro Ala Ala Gly Arg Gly Ile Ala Trp Ala Asn Gly		20	25	30		ggc ccc cgg ttc ggc gac atg gtc tgg gcc aag gtg aag tcc cat ccg	144	Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro		35	40	45		tgg tgg cct ggc cat atc tac agc gtc agc ctc acc gac gag gag	192	Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu		50	55	60		gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240	Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly		65	70	75	80	gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																																																
10	15																																																																																																				
ggc gcc atg gtt cct gct gcc gga cgc ggc atc gca tgg gcg aac ggc	96																																																																																																				
Gly Ala Met Val Pro Ala Ala Gly Arg Gly Ile Ala Trp Ala Asn Gly																																																																																																					
20	25	30		ggc ccc cgg ttc ggc gac atg gtc tgg gcc aag gtg aag tcc cat ccg	144	Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro		35	40	45		tgg tgg cct ggc cat atc tac agc gtc agc ctc acc gac gag gag	192	Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu		50	55	60		gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240	Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly		65	70	75	80	gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																																																								
30																																																																																																					
ggc ccc cgg ttc ggc gac atg gtc tgg gcc aag gtg aag tcc cat ccg	144																																																																																																				
Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro																																																																																																					
35	40	45		tgg tgg cct ggc cat atc tac agc gtc agc ctc acc gac gag gag	192	Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu		50	55	60		gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240	Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly		65	70	75	80	gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																																																																
45																																																																																																					
tgg tgg cct ggc cat atc tac agc gtc agc ctc acc gac gag gag	192																																																																																																				
Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu																																																																																																					
50	55	60		gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240	Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly		65	70	75	80	gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																																																																								
60																																																																																																					
gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240																																																																																																				
Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly																																																																																																					
65	70	75	80	gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																																																																																
75	80																																																																																																				
gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288																																																																																																				

Asp Ser Ser Tyr Gly Trp Phe Asp Pro Ser Glu Leu Val Pro Phe Glu			
85	90	95	
gac cac ttc acc gag aag gcg gcc cag ggc agc tcc cgc agc agc			336
Asp His Phe Thr Glu Lys Ala Ala Gln Gly Ser Ser Arg Ser Ser			
100	105	110	
ttt gcc gcc gcc gtg gcc gag gcc gtc gac gag gta gcc cgc cgc agc			384
Phe Ala Ala Ala Val Ala Glu Ala Val Asp Glu Val Ala Arg Arg Ser			
115	120	125	
gcg ctg gcg ctg ctc tgc cct tgc gac att cct gac gcc ttc cgt ccc			432
Ala Leu Ala Leu Leu Cys Pro Cys Asp Ile Pro Asp Ala Phe Arg Pro			
130	135	140	
cac ccc agc gac ggc aac ttc ttc ctg gtc gac gtc ccg gca ttc gac			480
His Pro Ser Asp Gly Asn Phe Phe Leu Val Asp Val Pro Ala Phe Asp			
145	150	155	160
acc gac gct gac tac caa ctc gac cag atc cgg gcc gca cgg cag cga			528
Thr Asp Ala Asp Tyr Gln Leu Asp Gln Ile Arg Ala Ala Arg Gln Arg			
165	170	175	
ttc gtg ccc cgg aag gcg ctc aac tac ctg ctg gac gcc gcc gtg act			576
phe Val Pro Arg Lys Ala Leu Asn Tyr Leu Leu Asp Ala Ala Val Thr			
180	185	190	
cag cga gac gcg gcg gaa aaa gcc gcg cgc acc gtg cct ggg atg gag			624
Gln Arg Asp Ala Ala Glu Lys Ala Ala Arg Thr Val Pro Gly Met Glu			
195	200	205	
atg gcc gcg ctg ttc ttg gcg tac cgc cgc gcg gtg ttt tcg ccg ata			672
Met Ala Ala Leu Phe Leu Ala Tyr Arg Arg Ala Val Phe Ser Pro Ile			
210	215	220	
gac aac acc tac gcc caa gct ttc ggg gtg gat cct gag ctg gct ctt			720
Asp Asn Thr Tyr Ala Gln Ala Phe Gly Val Asp Pro Glu Leu Ala Leu			
225	230	235	240
gct gcc gag cag aaa gcc gcg gca gag aga gct caa cga ggt atc aac			768
Ala Ala Glu Gln Lys Ala Ala Glu Arg Ala Gln Arg Gly Ile Asn			
245	250	255	
aac act cac atg ctc aat tct agc tgt act gtt gtt ctt gtt act gtg			816
Asn Thr His Met Leu Asn Ser Ser Cys Thr Val Val Leu Val Thr Val			
260	265	270	
tac ttg aaa ttg atg ggt aaa caa tgt tcc tac tgc ttt tat aga tca			864
Tyr Leu Lys Leu Met Gly Lys Gln Cys Ser Tyr Cys Phe Tyr Arg Ser			
275	280	285	
agc aac aat tat ttt gat gtg aat aac gga gtg gat ctg att caa ata			912
Ser Asn Asn Tyr Phe Asp Val Asn Asn Gly Val Asp Leu Ile Gln Ile			
290	295	300	
gtt tct att tca ctt ctg ttt aac tgt tgg ttg cat ttt ttt tat caa			960
Val Ser Ile Ser Leu Leu Phe Asn Cys Trp Leu His Phe Phe Tyr Gln			

305	310	315	320
cga gag tga ttattgaatt tgggatgata ttcatgcaga aacttgtga			
Arg Glu 1009			
ataaaattgtt tgtttacgg gattcagtcc atctaaccta gtaaaatatg agacatgcat 1069			
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tacgtgtcta tacgatacta tcctgatatg tatgctgagt taggtctttt ctcattctag 1189			
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agtcttgaga tgtttattt ctatatgtcc atacacttac atgacttagga agtttctct 1369			
gcagttatatt tggttctttt gcactatggt gacaattatt atacattgg aacttgg 1429			
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ttcacatata aaagctgcat ttttttatac aaattgttaa gtttgcgtt caaggaggat 1549			
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tgtttgtaa acagaagtgc gataaaactgt gtgaaactga ttctgaatga acgcccattgc 1669			
atatccaacc tagtaaaaata tttagacatgc atacccacag atcgatctgc acttggtcta 1729			
gaaactgaag gcctttgtga tatagtatca tatatgtgtc atttttctt tatgatgcca 1789			
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aaaaaaaaaa aaaaaaag 1866			
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gtg agt gct cag gag cgc tca ata caa cat act gct tac aac cct gaa 97			
Val Ser Ala Gln Glu Arg Ser Ile Gln His Thr Ala Tyr Asn Pro Glu			
20	25	30	
gtt act ttg aac ttg cca cca cca cct cca ctt cca aca ata cca cac 145			
Val Thr Leu Asn Leu Pro Pro Pro Pro Leu Pro Thr Ile Pro His			

35	40	45	
agt tct gct aca tta cag tct caa ggt ggc cac agt ttg ccc tca cag			193
Ser Ser Ala Thr Leu Gln Ser Gln Gly Gly His Ser Leu Pro Ser Gln			
50	55	60	
aca aac cag caa ctg tat cag cca gag cag tat tat gtg ccc caa aac			241
Thr Asn Gln Gln Leu Tyr Gln Pro Glu Gln Tyr Tyr Val Pro Gln Asn			
65	70	75	80
aac tat ggt cca tta gtt cca gtt agc cat tct aac ctt caa atc agc			289
Asn Tyr Gly Pro Leu Val Pro Val Ser His Ser Asn Leu Gln Ile Ser			
85	90	95	
aac act aac aac ccc acc ctt acc atc cca caa gtg aac cct gga cct			337
Asn Thr Asn Asn Pro Thr Leu Thr Ile Pro Gln Val Asn Pro Gly Pro			
100	105	110	
cca aca aat aat cag att ggg aat ttg gcc cag cca cag cat tct atg			385
Pro Thr Asn Asn Gln Ile Gly Asn Leu Ala Gln Pro Gln His Ser Met			
115	120	125	
cca ctg cat gtt gat aga gca agt cag gat ttc tct tct cag ggg caa			433
Pro Leu His Val Asp Arg Ala Ser Gln Asp Phe Ser Ser Gln Gly Gln			
130	135	140	
caa caa aat cgt ggt cct ggt gct gca caa gct ccc gag gag gat aaa			481
Gln Gln Asn Arg Gly Pro Gly Ala Ala Gln Ala Pro Glu Glu Asp Lys			
145	150	155	160
agc aag aag tac cag gcg aca ctc cag tta gct caa aac cta ctg ctt			529
Ser Lys Lys Tyr Gln Ala Thr Leu Gln Leu Ala Gln Asn Leu Leu Leu			
165	170	175	
cag tta cag cag cgt gga tct gga aat caa tcc tga gacctaatta			575
Gln Leu Gln Gln Arg Gly Ser Gly Asn Gln Ser			
180	185		
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aactcgacgg ctgcgcctcc actctacaat cgaagcggcc catgggtgt cagctcggttgc			695
gcctacacct acttgcccca gttctccctt ttcaaggaca tacattacca gaaaacgatt			755
tcttttctc ctttttattt tatcgtgtat ttgatatgga taatccggcc tgaattttgt			815
actcgtttgt tagtatggcc tcgtgttatg ttgttattta ctctgaaacc atatgttattt			875
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52203

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1	5	10	15
gat cca caa tca ttg ata caa tat ctt gct tac caa gat ttg tgt gtg 97			
Asp Pro Gln Ser Leu Ile Gln Tyr Leu Ala Tyr Gln Asp Leu Cys Val			
20	25	30	
gta tct gag tgt aac ttg gaa ccg tgg cgc aga gct gct ttc ttt gag 145			
Val Ser Glu Cys Asn Leu Glu Pro Trp Arg Arg Ala Ala Phe Phe Glu			
35	40	45	
gaa tct ggt gaa act tat aga aga att gtg aca gct tgt ttg aag cca 193			
Glu Ser Gly Glu Thr Tyr Arg Arg Ile Val Thr Ala Cys Leu Lys Pro			
50	55	60	
ctt gag gag ttt act tca aaa att gct gaa gcc ctt gaa ggt ttt tct 241			
Ileu Glu Glu Phe Thr Ser Lys Ile Ala Glu Ala Leu Glu Gly Phe Ser			
65	70	75	80
agt gat cag cca gaa ttg atg cta caa cag tcc aga ctc ttt agt gca 289			
Ser Asp Gln Pro Glu Leu Met Leu Gln Gln Ser Arg Leu Phe Ser Ala			
85	90	95	
ttt gat gat tcc cag ata tgc aca tgg tgt gct agg aca ctg gct gga 337			
Phe Asp Asp Ser Gln Ile Cys Thr Trp Cys Ala Arg Thr Leu Ala Gly			
100	105	110	
tta act gca cgc tca cgc aag gag gat cga tat ggt gtt gct caa ctg 385			
Leu Thr Ala Arg Ser Arg Lys Glu Asp Arg Tyr Gly Val Ala Gln Leu			
115	120	125	
act ggc tgc aat gcc gct gtg atg aca aca ttg ctg tct gcc cta gta 433			
Thr Gly Cys Asn Ala Ala Val Met Thr Thr Leu Leu Ser Ala Leu Val			
130	135	140	
gca atc gag aca tgt tta gga aag aaa aca aac cca cag cct gtg cgc 481			
Ala Ile Glu Thr Cys Leu Gly Lys Lys Thr Asn Pro Gln Pro Val Arg			
145	150	155	160
tca ctg gga cct gaa aac att agg tgg act aac ctc tcc aca gga cga 529			
Ser Leu Gly Pro Glu Asn Ile Arg Trp Thr Asn Leu Ser Thr Gly Arg			
165	170	175	
aaa ggc aat gga gtt gca att gca agc aca caa aaa agt ggc ctg cac 577			
Lys Gly Asn Gly Val Ala Ile Ala Ser Thr Gln Lys Ser Gly Leu His			
180	185	190	
aag aaa gct tat atc atg gca gat gtt ctt cgg act tct gtt tat cat 625			
Lys Lys Ala Tyr Ile Met Ala Asp Val Leu Arg Thr Ser Val Tyr His			
195	200	205	

Zea mays CDS

ata ctt tca gca ttc att gat gac ctg caa gct aat gca aaa cca tcc	673
Ile Leu Ser Ala Phe Ile Asp Asp Leu Gln Ala Asn Ala Lys Pro Ser	
210 215 220	
agc tta gag aag aac tgg atc agt gaa ggg aga aag cct gta tat ggt	721
Ser Leu Glu Lys Asn Trp Ile Ser Glu Gly Arg Lys Pro Val Tyr Gly	
225 230 235 240	
tca caa gcc gtg ttg gtt cag aag ttg att ctg ttt att gag tac cga	769
Ser Gln Ala Val Leu Val Gln Lys Leu Ile Leu Phe Ile Glu Tyr Arg	
245 250 255	
gct gta tga acttggttcc atgtctctca gatcctttgc ctgcacatca	818
Ala Val	
gatcatactt ggatggaagt gtttttagttc tcgaacttgg ttgaagaacc tttgctttcc	878
accagagcct ataaagatgc atcgtaaact aacagtttca ccagagccta taaagatgca	938
tcgtaaacta acagtttctc aatatggact tctggcttct gtattcctgt gggctggtgc	998
actgcggaag gcaccggccgc tcaggccttg tttcgagtct ggttatccac tcaggccttc	1058
tattctgact tgtactttga aagttgaata gagttacctg tggtagca tggagatgg	1118
atgtgaaaga tttgcgattt ttgatatcca cgtacccaaat agatttatga cacagactgt	1178
tagtactgtc taactacacc ttggAACGAG gggcatattc agggcctgtt tggAACATA	1238
gtttttaaaa accacattat tatgatatca tggtagttca attgtcgtgc tgtaaccatg	1298
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gcg gag gct gac gcg caa gcc ggt ggc gcg gag gca cag acc gag gtg	97
Ala Glu Ala Asp Ala Gln Ala Gly Gly Ala Glu Ala Gln Thr Glu Val	
20 25 30	
ctc ggc gcc ggc gag cct gat ctc gag agc aag atc gtg gcc atc agg	145
Leu Gly Ala Gly Glu Pro Asp Leu Glu Ser Lys Ile Val Ala Ile Arg	

TOP 2500

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ctg cag aac ctg gca gac atg gat gtt acc tac aac gca ctc cag gag Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu 65 70 75 80			241
act gac atc ggg cgg cag gtt aat ggt ctg cgc aag cat cct tcg gcc Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala 85 90 95			289
gag gtc agg cgg ctg gtg aag cag ctc atc agg aag tgg aag gag ata Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile 100 105 110			337
gtg gac gac tgg gtg cgc ctg gac aat tcc ggc ggt gac ggc agt gcc Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala 115 120 125			385
tct gtt atg act gat ggt gac tcc cca cat aaa atc caa ggc aga agc Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser 130 135 140			433
cac caa agc cct cgg gtt tcg ggg ttt cag tat tct cca agc cca cag His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln 145 150 155 160			481
agg ttt aat ggt tca act tca gag atg gct aac aat ggg ttt gag tca Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser 165 170 175			529
aca atg gat gcg aag cgt agg gcc agc cct gta cca gca cat cat aac Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn 180 185 190			577
tcc agg cag atg aac aac aat cat cat tct act act att acc acc agc Ser Arg Gln Met Asn Asn His His Ser Thr Thr Ile Thr Thr Ser 195 200 205			625
acg tca tct gct cca gct ttc tcg gtg cag aaa gtg aca agg gag caa Thr Ser Ser Ala Pro Ala Phe Ser Val Gln Lys Val Thr Arg Glu Gln 210 215 220			673
aag cag agt ctt gtg gac ctt gac agg ctt gat tct gcc agg aag agg Lys Gln Ser Leu Val Asp Leu Asp Arg Leu Asp Ser Ala Arg Lys Arg 225 230 235 240			721
ctc cag gag aat tac caa gaa gca caa aat gcc aaa aag cag agg aca Leu Gln Glu Asn Tyr Gln Glu Ala Gln Asn Ala Lys Lys Gln Arg Thr 245 250 255			769
atc caa gtg atg gac atc aat gac ata cca aag ccg aag agc aga aac Ile Gln Val Met Asp Ile Asn Asp Ile Pro Lys Pro Lys Ser Arg Asn 260 265 270			817

gct ttc atc cgc aag agc ggc agc ggt ggg ctc ccg gcg agg cac cga	865														
Ala Phe Ile Arg Lys Ser Gly Ser Gly Leu Pro Ala Arg His Arg															
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	285														
tag cctaacctcc ttctgtcggt ggatatctgc gacacttgcg aagttgtgcc	918														
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at	1160														

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<213> Zea mays

1

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	15				

Met Val Arg Asn Ala Arg Arg Ser Met Leu Glu Glu Leu Glu Gly Met			
20	25		30
	30		

Leu Glu Ile Val Glu Pro Gln Pro Pro Gly Lys Pro Arg Thr Leu Ser			
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	45		

Arg Arg Arg Phe Asp Leu Pro Glu Gly Val Ala Ile Glu Lys Glu			
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	10				
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Gly Pro Val His Asn Arg Thr Gln Leu Leu Leu Leu Leu Val Ala			
20	25		30
	30		

Val Ala Ala Ser Ala Ser Thr Ala Gly Phe Leu Leu Arg Gly Ala Leu			
35	40		45
	45		

Arg Asp Pro Cys Asp Gly Arg Gly Asp Pro Ala Ala Leu Asn Thr Ala			
50	55		60
	60		

卷一百一十五

Val	Ala	Ser	Gly	Ser	Pro	Leu	Gly	Phe	Met	Arg	Ser	Lys	Leu	Val	Leu
65					70					75					80
Leu	Val	Ser	His	Glu	Leu	Ser	Leu	Ser	Gly	Gly	Pro	Leu	Leu	Leu	Met
				85					90						95
Glu	Leu	Ala	Phe	Leu	Leu	Arg	His	Val	Gly	Ser	Gln	Val	Val	Trp	Ile
				100					105						110
Thr	Asn	Gln	Arg	Ser	Gln	Glu	Thr	Asn	Asp	Val	Thr	Tyr	Ser	Leu	Glu
				115					120						125
His	Arg	Met	Leu	Asn	His	Gly	Val	Gln	Val	Leu	Pro	Ala	Arg	Gly	Gln
				130					135						140
Glu	Ala	Val	Asp	Ile	Ala	Leu	Lys	Ala	Asp	Leu	Val	Ile	Leu	Asn	Thr
				145					150						160
Ala	Val	Ala	Gly	Lys	Trp	Leu	Asp	Pro	Val	Leu	Lys	Asp	His	Val	Pro
				165					170						175
Lys	Val	Leu	Pro	Lys	Ile	Leu	Trp	Trp	Ile	His	Glu	Met	Arg	Gly	His
				180					185						190
Tyr	Phe	Lys	Val	Glu	Tyr	Val	Lys	His	Leu	Pro	Phe	Val	Ala	Gly	Ala
				195					200						205
Met	Ile	Asp	Ser	His	Thr	Thr	Ala	Glu	Tyr	Trp	Asn	Ser	Arg	Thr	Ser
				210					215						220
Asp	Arg	Leu	Lys	Ile	Gln	Met	Pro	Gln	Thr	Tyr	Val	Val	His	Leu	Gly
				225					230						240
Asn	Ser	Lys	Glu	Leu	Met	Glu	Val	Ala	Glu	Asp	Asn	Val	Ala	Arg	Arg
				245					250						255
Val	Leu	Arg	Glu	His	Ile	Arg	Glu	Ser	Leu	Gly	Val	Arg	Ser	Glu	Asp
				260					265						270
Leu	Leu	Phe	Ala	Ile	Ile	Asn	Ser	Val	Ser	Arg	Gly	Lys	Gly	Gln	Asp
				275					280						285
Leu	Phe	Leu	Gln	Ala	Phe	Tyr	Gln	Ala	Leu	Gln	Leu	Ile	Gln	His	Glu
				290					295						300
Lys	Leu	Lys	Val	Pro	Arg	Ile	His	Ala	Val	Val	Val	Gly	Ser	Asp	Val
				305					310						320
Asn	Ala	Gln	Thr	Lys	Phe	Glu	Thr	Gln	Leu	Arg	Asp	Phe	Val	Val	Lys
				325					330						335
Asn	Thr	Ile	His	Asp	Arg	Val	His	Phe	Val	Asn	Lys	Thr	Leu	Ala	Val
				340					345						350
Ala	Pro	Tyr	Leu	Ala	Ala	Ile	Asp	Val	Leu	Val	Gln	Asn	Ser	Gln	Gly
				355					360						365

Arg Gly Glu Cys Phe Gly Arg Ile Thr Ile Glu Ala Met Ala Phe Lys
 370 375 380
 Leu Pro Val Leu Gly Thr Ala Ala Gly Gly Thr Thr Glu Ile Val Leu
 385 390 395 400
 Asp Gly Ser Thr Gly Leu Leu His Pro Ala Gly Lys Glu Gly Val Ala
 405 410 415
 Pro Leu Ala Lys Asn Ile Val Arg Leu Ala Ser His Ala Glu Gln Arg
 420 425 430
 Val Ser Met Gly Glu Lys Gly Tyr Gly Arg Val Lys Glu Met Phe Met
 435 440 445
 Glu His His Met Ala Glu Arg Ile Ala Ala Val Leu Lys Asp Val Leu
 450 455 460
 Arg Lys Ser Gln Glu His Ser Arg Ser
 465 470

<210> 46
 <211> 400
 <212> PRT
 <213> Zea mays
 <400> 46
 Pro Arg Val Arg Leu Ile Ile Glu Lys Asn Arg Asp Tyr Thr Val Asp
 1 5 10 15
 Tyr Ser Ser Ser Phe Gly Leu Ser Gly Ala Ser Tyr Ile Ser Ser
 20 25 30
 Pro Met Arg Glu Thr Glu Gln Ser Lys Thr Ser Phe Asp Gln Phe Tyr
 35 40 45
 Ser Asn Ala Asn Phe Gln Leu Tyr Leu Ser Phe Cys Asn Phe Asp Lys
 50 55 60
 Ala Met Phe Leu Gly Phe Phe His Glu Leu Ser Glu Leu Pro Phe Glu
 65 70 75 80
 Leu Gln Arg Lys Ala Val Arg Asp Leu Lys Thr Ser Leu Ser Gly Glu
 85 90 95
 Asn Glu Ile Trp His Ser Met Val Tyr Asn Gly Phe Phe Glu Ala Phe
 100 105 110
 His Glu Phe Leu Lys Asn Asp Ser Gly Ile His Thr Leu Gln Ala Arg
 115 120 125
 Arg Ala Gly Ile Gln Phe Phe Leu Ala Phe Leu Ser Ser Gly Arg Ala
 130 135 140
 Arg Ile Pro Ser Val Cys Glu Asp Val Val Leu Leu Ile Ala Ser Leu

1000
900
800
700
600
500
400
300
200
100

	145	150	155	160
His Asp Ser Glu Phe Lys Gln Glu Ala Leu Leu Ile Val His Glu Leu	165		170	175
Leu Gln Glu Pro Ser Cys Pro Lys Ser Ser Leu Met Ala Ser Ile Leu	180		185	190
Ser Pro Ser Val Phe Gly Ala Leu Asp Ser Gly Glu Thr Lys Cys Leu	195		200	205
Asp Leu Ala Leu Gln Ile Ile Cys Lys Ile Ser Ser Asp Asn Asp Ile	210		215	220
Lys Ser Tyr Leu Leu Ser Ser Gly Ile Val Ser Arg Leu Ser Pro Leu	225		230	240
Leu Gly Glu Gly Lys Met Thr Glu Cys Ser Leu Lys Ile Leu Arg Asn	245		250	255
Leu Ser Asp Val Lys Glu Thr Ala Gly Phe Ile Ile Arg Thr Gly Asn	260		265	270
Cys Val Ser Ser Ile Ser Asp His Leu Asp Thr Gly Ser His Ser Glu	275		280	285
Arg Glu His Ala Val Val Ile Leu Leu Gly Val Cys Ser His Ser Pro	290		295	300
Glu Val Cys Ser Leu Ser Met Lys Glu Gly Val Ile Pro Ala Leu Val	305		310	320
Asp Leu Ser Val Ser Gly Thr Lys Val Ala Arg Asp Cys Ser Val Lys	325		330	335
Leu Leu Gln Leu Leu Arg Asn Phe Arg Arg Cys Asp Gln Phe Ser Ser	340		345	350
Ser Cys Ser Arg Glu Leu Ala Val Asp His Val Ser Glu Asn Thr Arg	355		360	365
Asn Gly Ser Ile Cys Met Gln Pro Ile Ser Lys Ser Ala Arg Tyr Ile	370		375	380
Ser Arg Lys Leu Asn Leu Phe Ser Lys Pro Arg Ser Leu Thr Leu Ala	385		390	400

<210>	47
<211>	149
<212>	PRT
<213>	Zea mays
<400>	47

Met Gly Gln Ile Glu Ser Gln Val Thr Pro Pro Ala Glu Glu Pro Ser

1	5	10	15
Pro Pro Thr Val Glu Pro Ser Pro Ser Ser Pro Ala Pro Pro Pro Ser			
20	25		30
Ser Leu Glu Ala Ile Ala Ala Glu Ala Met Ser Phe Asp Glu Asp Asp			
35	40		45
Thr Glu Glu Ser Ile Asp Val Lys Val Gln Lys Ala Leu Asp Cys Pro			
50	55		60
Cys Val Ala Asp Leu Lys Asn Gly Pro Cys Gly Gly Gln Phe Val Asp			
65	70	75	80
Ala Phe Ser Cys Phe Leu Arg Ser Arg Glu Glu Glu Lys Gly Ser Asp			
85	90		95
Cys Val Lys Pro Phe Ile Thr Leu Gln Asp Cys Ile Lys Ala Asn Pro			
100	105		110
Glu Ala Phe Ser Lys Glu Ile Leu Glu Glu Glu Asn Asp Glu Glu			
115	120		125
Ala Asp Lys Ser Asn Leu Lys Val Arg Ala Pro Ser Trp Ser Arg Glu			
130	135		140
Ser Lys Pro Lys Val			
145			
<210> 48			
<211> 45			
<212> PRT			
<213> Zea mays			
<400> 48			
Gly Gln Thr Arg Trp Glu Met Phe Asp Leu Leu Ser Ser Leu Pro Ser			
1	5	10	15
Thr Ser Ser Ala Ser Ser Thr Thr Val Ser Ser Thr Ala Ser Ser			
20	25		30
Gly Ala Pro Pro Pro Ser Arg Pro Asp Trp Met Leu Phe			
35	40		45
<210> 49			
<211> 217			
<212> PRT			
<213> Zea mays			
<400> 49			
His Ala Ser Ala Ile Gly Arg Leu Ile Ser Pro Ser Ser Gly Cys Ser			
1	5	10	15

20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990

Gly Thr Ser Ser Pro Phe Pro Asp Pro Glu Met Gln Ala Ser Ser Arg
20 25 30

Ser Ala Leu Arg Leu Phe Pro Val Arg Glu Pro Pro Lys Ile Leu Asp
35 40 45

Gly Glu Gly Val Ala Thr Gln Lys Leu Ile Pro Arg His Met Arg Asn
50 55 60

Gly Gly Ser Leu Leu Asp Gly Gln Ile Ser Ala Ala Val Pro Val Val
65 70 75 80

Asp Phe Ser Ala Arg Leu Gln Pro Asn Glu His Ala Met Asp His Arg
85 90 95

Val Ser Phe Glu Leu Thr Val Glu Asp Val Ala Arg Cys Leu Glu Lys
100 105 110

Lys Thr Ala Ile Ser Gly Asp Ser Gly Thr Ala Ser Phe His Leu Ala
115 120 125

Pro Thr Gly Ser Gly Asp His His Arg Glu Ser Asn Glu Ala Arg Ala
130 135 140

Gly Leu Tyr Val Asp Glu Ser Tyr His Asp Leu Pro Glu Lys Ala Arg
145 150 155 160

Arg Ser Leu Ser Leu Arg Leu Ala Lys Glu Phe Asn Phe Asn Asn Val
165 170 175

Asp Val Gly Ser Val Glu Pro Ser Val Gly Ser Asp Trp Trp Ala Asn
180 185 190

Glu Lys Val Ala Gly Met Thr Thr Glu Pro Lys Lys Asn Trp Ser Phe
195 200 205

His Pro Val Val Gln Pro Gly Val Ser
210 215

<210> 50
<211> 198
<212> PRT
<213> Zea mays

<400> 50

Met Gly Lys Ala Lys Lys Gly Pro Lys Phe Ala Val Met Lys Lys Ile
1 5 10 15

Val Thr Ser Lys Ala Ile Lys Ser Tyr Lys Glu Glu Val Leu Asn Pro
20 25 30

Glu Lys Lys Asn Leu Met Lys Glu Lys Leu Pro Arg Asn Val Pro Thr
35 40 45

His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr Ala Leu Gly Pro Pro

50 55 60

Tyr Arg Val Leu Val Asp Thr Asn Phe Ile Asn Phe Ser Ile Gln Asn
65 70 75 80

Lys Leu Asp Leu Glu Lys Gly Met Met Asp Cys Leu Tyr Ala Lys Cys
85 90 95

Thr Pro Cys Ile Thr Asp Cys Val Met Ala Glu Leu Glu Lys Leu Gly
100 105 110

Gln Lys Tyr Arg Val Ala Leu Arg Ile Ala Lys Asp Pro Arg Phe Glu
115 120 125

Arg Ile Leu Cys Thr His Lys Gly Thr Tyr Ala Asp Asp Cys Leu Val
130 135 140

Glu Arg Val Thr Gln His Lys Cys Tyr Ile Val Ala Thr Cys Asp Arg
145 150 155 160

Asp Leu Lys Arg Arg Ile Arg Lys Ile Pro Gly Val Pro Ile Met Tyr
165 170 175

Ile Thr Lys Arg Lys Tyr Ser Ile Glu Arg Leu Pro Glu Ala Thr Ile
180 185 190

Gly Gly Ala Pro Arg Ile
195

<210> 51
<211> 265
<212> PRT
<213> Glycine max

<400> 51

Met Ser Val Ile Asp Ile Leu Thr Arg Val Asp Ser Ile Cys Lys Lys
1 5 10 15

Tyr Asp Lys Tyr Asp Val Gln Ser Gln Arg Asp Ser Asn Leu Ser Ser
20 25 30

Asp Asp Ala Phe Ala Lys Leu Tyr Ala Ser Val Asp Ala Asp Ile Glu
35 40 45

Ala Leu Leu Gln Lys Ala Asp Thr Ala Ser Lys Glu Lys Ser Lys Ala
50 55 60

Ser Thr Val Ala Ile Asn Ala Glu Ile Arg Arg Thr Lys Ala Arg Leu
65 70 75 80

Leu Glu Glu Val Pro Lys Leu Gln Lys Leu Ala Met Lys Lys Val Lys
85 90 95

Gly Leu Ser Ser Gln Glu Phe Ala Ala Arg Asn Asp Leu Ala Leu Ala
100 105 110

Leu Pro Asp Arg Ile Gln Ala Ile Pro Asp Gly Thr Pro Ala Ala Ser
 115 120 125
 Lys Gln Thr Gly Ser Trp Ala Ala Ser Ala Ser Arg Pro Gly Ile Lys
 130 135 140
 Phe Asp Thr Asp Gly Lys Phe Asp Asp Glu Tyr Phe Gln Gln Thr Glu
 145 150 155 160
 Glu Ser Ser Gly Phe Arg Lys Glu Tyr Glu Met Arg Lys Met Lys Gln
 165 170 175
 Asp Gln Gly Leu Asp Met Ile Ala Glu Gly Leu Asp Thr Leu Lys Asn
 180 185 190
 Met Ala His Asp Met Asn Glu Glu Leu Asp Arg Gln Val Pro Leu Met
 195 200 205
 Asp Glu Ile Asp Thr Lys Val Asp Arg Ala Ser Ser Asp Leu Lys Asn
 210 215 220
 Thr Asn Val Arg Leu Arg Asp Thr Val Asn Gln Leu Arg Ser Ser Arg
 225 230 235 240
 Asn Phe Cys Ile Asp Ile Val Leu Leu Ile Ile Ile Leu Gly Ile Ala
 245 250 255
 Ala Tyr Leu Tyr Asn Val Leu Lys Lys
 260 265

 <210> 52
 <211> 107
 <212> PRT
 <213> Zea mays

 <400> 52

 His Ala Ser Gly Phe Leu Lys Cys Ala Ile Leu Thr Lys Pro Gln Ser
 1 5 10 15
 Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
 20 25 30
 Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
 35 40 45
 Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
 50 55 60
 Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
 65 70 75 80
 Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ser Ala Ala Asp Thr Ala
 85 90 95

Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105

<210> 53
 <211> 478
 <212> PRT
 <213> Glycine max

<400> 53

Ile Arg Leu Glu Phe Glu Ser Leu Glu Ile Glu Met Ala Asn Glu Asn
 1 5 10 15

Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu
 20 25 30

Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met
 35 40 45

Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn
 50 55 60

Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser
 65 70 75 80

Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu
 85 90 95

Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp
 100 105 110

Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile
 115 120 125

Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys
 130 135 140

Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly
 145 150 155 160

Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val
 165 170 175

Pro Leu Ser Ser Ser Asp Arg Tyr Asp Leu Gly Thr Thr Glu Asn
 180 185 190

Thr Val Ser Ser Pro Gly Pro Glu Ser Asp Ser Ser Arg Ser Tyr His
 195 200 205

Asn Pro Ala Asn Tyr Gln Asn Leu Pro Ser Ile His Pro Ala Ala Pro
 210 215 220

Lys Phe His Asp Thr Val Asn Asp Gln His Ser Ala Asn Ile Pro Ser
 225 230 235 240

Ser Met Pro Phe His Asp Arg Val Asp Asn Asn Lys His Ser Ser Val

Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met Tyr Arg
 35 40 45
 Cys Lys Leu Thr Glu Thr His Ile Cys Asp Lys Asn Cys Asn Gln
 50 55 60
 Arg Ile Leu Tyr Asp Asn His Asn Ser Leu Cys Arg Val Ser Gly Gln
 65 70 75 80
 Leu Phe Pro Leu Ser Pro Leu Glu Gln Gln Ala Val Arg Gly Ile Arg
 85 90 95
 Arg Lys His Glu Val Asp Ser Ser Glu Gly Cys Cys Phe Lys Arg Arg
 100 105 110
 Arg Gly Ala Gln Leu His Pro Ser Pro Phe Glu Arg Ser Tyr Ser Ala
 115 120 125
 Val Tyr Pro Ile Pro Ser Gln Val Gly Asp Gly Met Asp Met Ser
 130 135 140

DRAFT: 1994-01-10

<210> 55
 <211> 393
 <212> PRT
 <213> Zea mays
 <400> 55
 Met Lys Val Leu Val Leu Ala Val Leu Ala Leu Val Ala Ala Ala Ser
 1 5 10 15
 Ala Ala Gly Gln Gly Glu Gly Gly Gly Pro Pro Leu Pro Phe Ala
 20 25 30
 Leu Gly Ala Ala Pro Ala Gly Cys Asp Val Ala Gln Gly Glu Trp Val
 35 40 45
 Arg Asp Asp Asp Ala Arg Pro Trp Tyr Gln Glu Trp Glu Cys Pro Tyr
 50 55 60
 Ile Gln Pro Gln Leu Thr Cys Gln Ala His Gly Arg Pro Asp Lys Ala
 65 70 75 80
 Tyr Gln Ser Trp Arg Trp Gln Pro Arg Gly Cys Ser Leu Pro Ser Phe
 85 90 95
 Asn Ala Thr Leu Met Leu Glu Met Leu Arg Gly Lys Arg Met Leu Phe
 100 105 110
 Val Gly Asp Ser Leu Asn Arg Gly Gln Tyr Val Ser Leu Leu Cys Leu
 115 120 125
 Leu His Arg Ala Ile Pro Asp Gly Ala Lys Ser Phe Glu Thr Val Asp
 130 135 140

Ser Leu Ser Val Phe Arg Ala Lys Asn Tyr Asp Ala Thr Ile Glu Phe
 145 150 155 160
 Tyr Trp Ala Pro Met Leu Ala Glu Ser Asn Ser Asp Asp Ala Val Val
 165 170 175
 His Ser Ala Asp Asp Arg Leu Ile Arg Gly Ala Pro Met Asp Arg His
 180 185 190
 Tyr Ser Phe Trp Lys Gly Ala Asp Val Leu Val Phe Asn Ser Tyr Leu
 195 200 205
 Trp Trp Val Ala Gly Asp Lys Ile Gln Ile Leu Arg Gly Ala Asp Asn
 210 215 220
 Asp Pro Ser Lys Asp Ile Val Glu Met Lys Ser Glu Glu Ala Tyr Arg
 225 230 235 240
 Leu Val Leu His Gln Val Val Arg Trp Leu Glu Arg Asn Val Asp Pro
 245 250 255
 Gly Lys Ser Arg Val Phe Phe Val Thr Ala Ser Pro Thr His Thr Asp
 260 265 270
 Gly Arg Ala Trp Gly Asp Asp Asp Ala Glu Gly Ser Ser Asn Cys Tyr
 275 280 285
 Asn Gln Thr Ser Pro Ile Ser Ala Ala Ser Ser Tyr Arg Gly Gly Thr
 290 295 300
 Ser Arg Glu Met Leu Arg Ala Thr Glu Glu Val Leu Ala Thr Ser Arg
 305 310 315 320
 Val Pro Val Gly Leu Val Asn Ile Thr Arg Leu Ser Glu Tyr Arg Arg
 325 330 335
 Asp Ala His Thr Gln Thr Tyr Lys Lys Gln Trp Val Glu Pro Thr Ala
 340 345 350
 Glu Gln Arg Ala Asp Pro Arg Ser Tyr Ala Asp Cys Thr His Trp Cys
 355 360 365
 Leu Pro Gly Val Pro Asp Thr Trp Asn Glu Leu Leu Tyr Trp Lys Leu
 370 375 380
 Phe Phe Pro Ser Asn Asp Gln Val Leu
 385 390

 <210> 56
 <211> 109
 <212> PRT
 <213> Zea mays

 <400> 56
 Thr Arg Pro Cys Asn Ser Met Asn Met Gln Leu Ser Gln Leu Pro Leu

1	5	10	15												
Asp	Cys	Lys	Arg	Leu	Thr	Tyr	Asp	Ala	Leu	Glu	Gly	Ala	Asn	Val	Thr
				20				25						30	
Pro	Thr	Ser	Phe	Tyr	Asn	Ile	Gly	Asp	Leu	Glu	Ile	Gln	Asp	Asn	Leu
					35				40				45		
Ala	Arg	Val	Trp	Val	Asp	Ile	Gly	Ile	His	Glu	Pro	Leu	Leu	Leu	Asp
					50			55			60				
Ile	Leu	Leu	Asn	Ala	Leu	Thr	Thr	Ile	Ser	Ser	Asp	His	Val	Gly	Ile
					65			70		75			80		
Lys	Gln	Val	Gln	Phe	Gly	Gly	Ser	Glu	Phe	Leu	Asn	Trp	Ser	Glu	Asp
					85			90					95		
Leu	Lys	Thr	Glu	Glu	Val	Gly	Tyr	Ser	Val	Cys	Lys	Ile			
					100			105							

EQUINE HEMOGLOBIN

<210>	57														
<211>	200														
<212>	PRT														
<213>	Glycine max														
<400>	57														
Phe	Gly	Ser	Ser	Met	Ala	Ser	Ala	Thr	Arg	Leu	Val	His	Cys	Glu	Leu
1				5				10					15		
Arg	Ser	Ala	Arg	Pro	Ala	Val	Arg	Ala	Arg	Glu	Pro	Ala	Gly	Pro	Val
				20				25					30		
Gln	Val	Thr	Ile	Pro	Lys	Pro	Lys	Ala	Ala	Glu	Ala	Glu	Gly	Ala	Asn
				35			40					45			
Ile	Val	Leu	Gln	Pro	Arg	Leu	Cys	Thr	Leu	Arg	Ser	Tyr	Gly	Ser	Asp
				50			55				60				
Arg	Ala	Gly	Val	Leu	Ile	Lys	Ala	Arg	Lys	Glu	Gly	Asp	Asp	Asp	Asp
					65		70			75			80		
Val	Ser	Pro	Phe	Phe	Ala	Ala	Leu	Ser	Asp	Tyr	Ile	Glu	Ser	Ser	Lys
					85			90					95		
Lys	Ser	His	Asp	Phe	Glu	Ile	Ile	Ser	Gly	Arg	Leu	Ala	Met	Met	Val
					100			105					110		
Phe	Ala	Ala	Thr	Val	Thr	Met	Glu	Met	Val	Thr	Gly	Asn	Ser	Met	Phe
					115			120					125		
Arg	Lys	Met	Asp	Ile	Glu	Gly	Ile	Thr	Glu	Ala	Gly	Gly	Val	Cys	Leu
					130			135				140			
Gly	Ala	Val	Thr	Cys	Ala	Ala	Leu	Phe	Ala	Trp	Phe	Ser	Ser	Ala	Arg
					145			150			155			160	

Asn Arg Val Gly Arg Ile Phe Thr Val Ser Cys Asn Ala Phe Ile Asp
 165 170 175
 Ser Val Ile Asp Gln Ile Val Asp Gly Leu Phe Tyr Glu Gly Asp Asp
 180 185 190
 Pro Thr Asp Trp Pro Asp Glu Pro
 195 200

 <210> 58
 <211> 285
 <212> PRT
 <213> Zea mays

 <400> 58

 Pro Arg Val Arg Cys Pro Thr Thr Leu Lys Arg Ile Cys Arg Gln His
 1 5 10 15

 Gly Ile Asn Arg Trp Pro Ser Arg Lys Ile Lys Lys Val Gly His Ser
 20 25 30

 Leu Lys Lys Leu Gln Met Val Ile Asp Ser Val His Gly Ser Glu Gly
 35 40 45

 Thr Val Gln Leu Ser Ser Leu Tyr Glu Asn Phe Thr Lys Thr Thr Trp
 50 55 60

 Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu
 65 70 75 80

 Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg
 85 90 95

 Phe Thr Ser His Thr Ser Gly Ser Asn Ser Leu Ser Pro Ser Cys Ser
 100 105 110

 Gln Ser Ser Asn Ser Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln
 115 120 125

 Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met
 130 135 140

 Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu
 145 150 155 160

 Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His
 165 170 175

 Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly
 180 185 190

 Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly
 195 200 205

Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys
 210 215 220
 Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr
 225 230 235 240
 Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr
 245 250 255
 Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser
 260 265 270
 Thr Gln Thr Val Arg Ile Leu Val His Ser Ser Asp Gln
 275 280 285

<210> 59
 <211> 115
 <212> PRT
 <213> Zea mays

<400> 59

Met Arg Ala Met Ser Ser Ala Val Asn Gly Met Leu Arg Ala Arg Leu
 1 5 10 15
 Arg Gly Ala Ala Arg Val Arg Gly Gly Gly Glu Gly Ala Gly Arg
 20 25 30
 Trp Thr Thr Pro Gly His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn
 35 40 45
 Arg Pro Pro Pro Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu
 50 55 60
 Leu Pro Cys Tyr Val Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val
 65 70 75 80
 Gly Leu Asn Ala Lys Pro Asp Leu Thr Ile Glu Thr Trp Ala His Gln
 85 90 95

Lys Ala Leu Glu Arg Leu Gln Gln Glu Leu Ala Ala Ala Asp Thr
 100 105 110

Gln Ala Glu
 115

<210> 60
 <211> 168
 <212> PRT
 <213> Glycine max

<400> 60

Ile Arg Leu Glu Gln Arg Pro Val Glu Gly Asn Ala Thr Met Lys Gln
 1 5 10 15

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Asp Leu Arg Ser Phe Lys Leu Ile Leu Glu Tyr Ile Lys Ala Leu Pro
20 25 30

Thr Gly Gln Glu Thr Asp Phe Val Leu Val Ser Cys Ser Gly Leu Gly
35 40 45

Ile Glu Pro Ser Arg Arg Glu Gln Val Leu Lys Ala Lys Arg Ala Gly
50 55 60

Glu Asp Ser Leu Arg Arg Ser Gly Leu Gly Tyr Thr Ile Val Arg Pro
65 70 75 80

Gly Pro Leu Gln Glu Glu Pro Gly Gly Gln Arg Ala Leu Ile Phe Asp
85 90 95

Gln Gly Asn Arg Ile Ser Gln Gly Ile Ser Cys Ala Asp Val Ala Asp
100 105 110

Ile Cys Val Lys Ala Leu His Asp Thr Thr Ala Arg Asn Lys Ser Phe
115 120 125

Asp Val Cys Tyr Glu Tyr Ile Ala Glu Asp Gly Arg Glu Leu Tyr Glu
130 135 140

Leu Val Ala His Leu Pro Asp Lys Ala Asn Asn Tyr Leu Thr Pro Ala
145 150 155 160

Leu Ser Val Leu Glu Lys Asn Thr
165

<210> 61
<211> 723
<212> PRT
<213> Zea mays

<400> 61

Met Ala Gly Lys Glu Asp Glu Asn Glu Lys Pro Ser Leu Val Ala Ala
1 5 10 15

Gly Gly Lys Gln Asp Arg Thr Ala Ala Thr Thr Glu Ser Leu Pro Gln
20 25 30

Arg Thr Asn Leu Glu Trp Gly Lys Ala Ala Cys Ser Glu Asp Asp Ile
35 40 45

Gln Lys Cys Val Ala Ala Gly Ala Phe His Pro Gly Glu Leu Val Glu
50 55 60

Trp Arg Ala Pro Val Lys Asp Glu Thr Pro Thr Leu Ser Thr Met Glu
65 70 75 80

Asp Gln Phe Val Ile Leu Ser Leu Thr His Ile Ile Cys Gly Leu Arg
85 90 95

Val Asp Ala Ser Asp Phe Leu Val Ser Val Leu Glu Tyr Tyr Arg Leu
 100 105 110
 Glu Trp Ser His Leu Thr Pro Asn Ser Ile Thr Ala Leu Ser Ile Phe
 115 120 125
 Ala His Leu Cys Glu Ala Tyr Val Glu Ala Pro Pro Thr Val Glu Val
 130 135 140
 Phe Thr His Phe Tyr Ser Leu Tyr His Asn Arg Lys Gly Glu Thr Thr
 145 150 155 160
 Thr Leu Gly Ala Val Tyr Phe Arg Leu Arg Asp Arg Met Lys Lys Asn
 165 170 175
 Tyr Pro Leu Tyr Tyr Leu Arg Ser Ser Gln Phe Met Trp Val Ser Leu
 180 185 190
 Trp Phe Tyr Ala Lys Val Pro Lys Ser Cys Arg Leu Thr Phe Arg Gly
 195 200 205
 Asp Ile Leu Lys Glu Glu Asn Asn Trp Asn Trp Lys Asp Leu Leu Pro
 210 215 220
 Leu Ser Cys Glu Gln Met Lys Gln Val Gly Gln Ile Met Lys Leu Ser
 225 230 235 240
 Asn Gln Gly Leu Thr Gly Ala Asp Ile Ile His Asp Tyr Leu Lys Arg
 245 250 255
 Arg Ile Ser Pro Leu Arg Arg Arg Met His Leu Thr Cys Asn Tyr Ser
 260 265 270
 Gly Leu Ser Asp Pro Thr Arg Asp Ser Asp Lys Asp Leu Ser Val Glu
 275 280 285
 Asp Ile Glu Ser Lys Leu Ser Tyr Leu Leu Asp Leu Lys Arg Met Gly
 290 295 300
 Val Lys Gln Pro Thr Gly Arg Leu Val Arg Ala Ser Thr Asn Asp Gln
 305 310 315 320
 Ala Asn Gln Pro Leu Asp Leu Leu Asn Val Cys Ser Thr His Glu Ala
 325 330 335
 Lys Lys Glu Ala Gln Pro Gln Val Cys Ala Ser Leu Arg Arg Tyr Thr
 340 345 350
 Arg Gln Ser Ala Gly Pro Arg Lys Val Ala Val Pro Pro Pro Leu Lys
 355 360 365
 Ile Asp Pro Pro Pro Thr Gln Gly Pro Ala Pro Glu Glu Ile Leu Asp
 370 375 380
 Ala Thr Thr Asn Ile Ala Thr Ala Val Ser Pro Asn Leu Gly Val Glu
 385 390 395 400

Gln Lys Ser Ile Glu His Pro Thr Val Ala Glu Glu Arg Lys Ile Ala
 405 410 415
 Glu Leu Val Lys Pro Thr Phe Ser Val Ile Gly Ala Lys Arg Lys Ala
 420 425 430
 Ser Ala Pro Arg Ser Arg Ser Lys Arg Arg Ala Lys Tyr Ser Leu Leu
 435 440 445
 Ser Val Val Thr Lys Thr Arg Met Ser Ser Leu Asp Thr Gly Ser Ile
 450 455 460
 Lys Gly Thr Ser Arg Thr Lys Glu Ala Val Leu Ala Leu Asn Ser Arg
 465 470 475 480
 Ser Ile Gly Leu Ala Arg Cys Pro Pro Ala Ser Leu Ala Glu Gly Thr
 485 490 495
 Gly Asn Gly Gly Leu Phe Met Leu Ala Lys Val Val Asp His Thr Lys
 500 505 510
 Val Val Glu Asp Ser Met Ser Asn Ile Leu Leu Asn Gln Gln Val Gly
 515 520 525
 Asp Ser Ser Arg Lys Glu Val Asp Pro Ala Gln Ser Ile Thr Glu Ile
 530 535 540
 Val Gln Asp Gln Glu Ala Ile Glu Val Ser Ala Ala Ile Pro Val Pro
 545 550 555 560
 Asn Lys Glu Glu Ile Asn Ser Gly Val Ile Trp Glu Arg Met Gln Lys
 565 570 575
 Val Gln Ser Glu Tyr Val Ser Leu Ser Met Thr Ala Ser Ser Glu Leu
 580 585 590
 Leu Glu Gln Ala Lys Lys Leu Val Met Glu Asn Lys Arg Leu Lys Asp
 595 600 605
 Val Gln Ile Met Leu Ser Gln Gln Val Lys Asp Leu Glu Asp Gly Arg
 610 615 620
 Arg Leu Leu Thr Glu Arg Met Lys Lys Ala Glu Gln Glu Thr Phe Lys
 625 630 635 640
 Ile Ile Glu Glu Asn Met Lys Leu Lys Asp Glu Asn Lys Gly Gln Lys
 645 650 655
 Gln Met Ile Glu Glu Leu Ser Lys Gln Asn Glu Ser Thr Leu Gly Ala
 660 665 670
 Leu Val His Lys Cys Thr Leu Leu Asp Arg Tyr Lys Glu Glu Ser Ala
 675 680 685
 Gln Leu Ile Arg Glu Lys Glu Glu Leu Gln Ser Arg Val Ser Arg Val
 690 695 700

Asn Asp Leu Val Lys Leu Val Ser Ser Thr Leu Cys Gln Glu Lys Asp
705 710 715 720

Ser Ala Ser

<210> 62
<211> 342
<212> PRT
<213> Glycine max

<400> 62

Met Ser Glu Lys Ala Leu Arg Asp Leu Asn Thr Ile Leu Gly Thr Glu
1 5 10 15

Arg Lys Asn Glu Asp Ser Ser Lys Ala Cys Leu Ser Lys Pro Ser Val
20 25 30

Asp Asn Ala Val Glu Asn Ile Glu Glu Trp Gln Lys Lys Asn Asn Ser
35 40 45

Pro Ser Leu Val Ser Pro Ala Val Asn Gly Asn Leu Ala Val Thr Ala
50 55 60

Asn Ser Gly Ala Glu Val Val Asn Pro Glu Val Glu Tyr Ile Glu Ser
65 70 75 80

Glu Asn Leu Asn Asp Val Asp Asp Ile Asp Thr Cys Leu Lys Thr Leu
85 90 95

Leu Ala Gly Leu Asp Ser Lys Asp Trp Val Leu Val Cys Asp Thr Leu
100 105 110

Asn Asn Val Arg Arg Leu Ser Ile Phe His Lys Glu Ala Met Leu Asp
115 120 125

Met Leu Gly Asp Val Ile Thr Ser Ile Ala Lys Ser Leu Lys Ser Pro
130 135 140

Arg Ser Ala Val Cys Lys Thr Ala Ile Met Thr Ser Ala Asp Ile Phe
145 150 155 160

Ser Ala Tyr Asn Asp Leu Ile Ile Asp Ser Leu Asp Pro Leu Leu Val
165 170 175

Gln Leu Leu Leu Lys Ser Ser Gln Asp Lys Arg Phe Val Cys Glu Ala
180 185 190

Ala Glu Lys Ala Leu Ile Ser Met Thr Ile Trp Ile Ser Pro Ile Ser
195 200 205

Leu Leu Pro Lys Leu Gln Pro Tyr Leu Lys Asn Lys Asn Pro Arg Ile
210 215 220

Arg Ala Lys Ala Ser Met Cys Phe Ser Arg Ser Val Pro Gln Leu Gly
225 230 235 240

Ala Glu Gly Ile Lys Thr Tyr Gly Ile Asp Lys Leu Ile Gln Val Ala
 245 250 255
 Ala Ser Gln Leu Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg
 260 265 270
 Thr Leu Leu Leu Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu
 275 280 285
 Ile Lys Pro Ala Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu
 290 295 300
 Glu Asn Pro Glu Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu
 305 310 315 320
 Ser Pro Leu Ser Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala
 325 330 335
 Arg Glu Gly Leu Val Ser
 340

<210> 63
 <211> 509
 <212> PRT
 <213> Zea mays

<400> 63

Pro Arg Val Arg Ala Leu Leu Ala Ser Thr Ile Val Pro His Pro Asn
 1 5 10 15

Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val
 20 25 30

Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala
 35 40 45

Cys Cys Arg Ala Ser Ser Val Leu Ser His Ile Val Lys Asp Asn Met
 50 55 60

Gln Ser Lys Asp Arg Val Leu Gln Ile Gln Leu Glu Thr Leu Thr Pro
 65 70 75 80

Ser Leu Gly Arg Thr Glu Pro Val Leu His Arg Ile Val Thr Cys Leu
 85 90 95

Ser Ile Ala Ala Ser Thr Glu Gly Glu Asn Asn Gln Asn Asn Gln Pro
 100 105 110

Glu Glu Pro Tyr Ile Gln Pro Val Ile Leu Arg Leu Leu Ile Ile Trp
 115 120 125

Leu Val Asp Cys Ser Asn Ala Val Asn Cys Leu Leu Glu Ser Ala Val
 130 135 140

His Leu Asn Tyr Ile Ile Glu Leu Ala Ser Ser Lys Arg Tyr Thr Ala
 145 150 155 160
 Cys Val Arg Gly Leu Ala Ala Val Val Leu Gly Ala Cys Ile Leu Tyr
 165 170 175
 Asn Ala Ser His Glu Lys Gly Arg Asp Ala Phe Ala Val Ala Asp Ala
 180 185 190
 Ile Ser Gln Lys Ile Gly Leu Thr Thr Tyr Phe Leu Arg Phe Asp Glu
 195 200 205
 Leu Arg Arg Ser Leu Ala His Pro Leu Pro Glu Gln His His Arg Lys
 210 215 220
 Glu Leu Ser Arg Ser Ser Ala Asn Ser Met Ser Asp Phe Gln Glu Ile
 225 230 235 240
 Glu Glu Asp Glu Thr Asn Lys Asp Asp Gln His Pro Val Leu Ser Glu
 245 250 255
 Ile Phe Asp Ser Gln Phe Val Asn Phe Leu Ser Lys Leu Glu Ala Asp
 260 265 270
 Ile Arg Glu Asn Ile Met Asp Ile Phe Ser Arg Thr Lys Thr Ala Thr
 275 280 285
 Ala Leu Leu Pro Thr Glu Leu Glu Gln Lys Asn Gly Glu Val Asp Gly
 290 295 300
 Glu Tyr Ile Lys Arg Leu Lys Ser Phe Val Glu Lys Gln Cys Asn Glu
 305 310 315 320
 Met Gln Asp Leu Leu Ala Arg Asn Ala Met Leu Ala Glu Glu Leu Val
 325 330 335
 Arg Thr Gly Gly Thr Thr Asp Thr Ser Gln Arg Pro Asn Asn
 340 345 350
 Gly Arg Glu Arg Val Gln Ile Glu Ala Leu Arg Gln Glu Leu Glu Gly
 355 360 365
 Ala Arg Arg Gln Ile Glu Ala Leu Glu Thr Asp Lys Ser Gln Ile Glu
 370 375 380
 Ala Glu Ala Asn Asn Gln Arg Asn Leu Ala Val Lys Leu Glu Ser Asp
 385 390 395 400
 Leu Lys Ser Leu Ser Glu Ala Tyr Asn Ser Ile Glu Gln Ala Asn Tyr
 405 410 415
 Arg Leu Asp Ala Glu Val Lys Thr Leu Arg Gln Gly Gly Ser Val Pro
 420 425 430
 Tyr Pro Asp Val Glu Ala Ile Lys Ala Gln Ala Lys Glu Glu Ala Glu
 435 440 445

Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln
 450 455 460
 Glu Gln Thr Lys Val Glu Lys Leu Ser Thr Arg Leu Ala Glu Leu Gly
 465 470 475 480
 Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile
 485 490 495
 Pro Asp Asp Asp Asp Asp Asp Asp Glu Asp Ser Glu Glu
 500 505

<210> 64
 <211> 102
 <212> PRT
 <213> Zea mays
 <400> 64

Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro Asp Ile
 1 5 10 15
 Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu Asn Ser
 20 25 30
 Asp Gln Cys Ala Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys Lys Gly
 35 40 45
 Leu Thr Val Glu Glu Ala Ser Leu Ile Gly Val Asp Ser Leu Gly Ile
 50 55 60
 Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg Phe Ser
 65 70 75 80
 Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys Ile Arg
 85 90 95
 Arg Met Leu Phe Pro Arg
 100

<210> 65
 <211> 587
 <212> PRT
 <213> Zea mays
 <400> 65

Pro Arg Val Arg Ser Val Leu Lys Thr Lys Pro Ser Pro Arg Ile Leu
 1 5 10 15
 Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30
 Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

200
180
160
140
120
100
80
60
40
20

Lys Pro Glu Asn Leu Glu Val Leu Ile Gln Lys Leu Glu Gln Leu Gln
355 360 365

Ser Met Asn Glu Glu Asp Ala Ser Ile Lys Glu Val Met Ala Ser Val
370 375 380

Thr Ala Asn Lys Asp His Gln Tyr Ile Tyr Glu Ile Leu Leu Ala Ser
385 390 395 400

Gly Leu Leu His Lys Glu His Ser Ile Thr Ala Leu Pro Ala Gln Leu
405 410 415

Gln Pro Ser Asn Tyr Pro Ile Asn Pro Glu Leu Phe Leu Ile Leu Glu
420 425 430

Gln Thr Lys Pro Asp Leu Val Phe Ala Phe Gln Thr Val Ser Gly Thr
435 440 445

Lys Lys Ser Cys Lys Pro Tyr Thr Gly Lys Leu His Arg Arg Leu Val
450 455 460

Phe Asp Leu Val Asn Glu Thr Ile Ala Gln Lys Met Ile Ile Cys Arg
465 470 475 480

Ser Gly Ser Gln Pro Val Lys Phe Leu Gln Ser Arg Lys Leu Ser Gly
485 490 495

Trp Gln Leu Phe Lys Asp Leu Cys Thr Glu Val Asp Arg Gln Ile Lys
500 505 510

Cys Thr Gly Glu Glu Glu Asn Gly Asn Met Ile Leu Asp Glu Asp Thr
515 520 525

Val Asn Gly Thr Lys Asp Trp Met Ser Phe Asp Thr Met Leu His Gly
530 535 540

Met Val Trp Glu Ile Glu Arg Ser Ile Phe Lys Gly Leu Ile Asp Glu
545 550 555 560

Val Ile Gly Gly Glu Thr Ile Glu Lys Met Gln Phe Gly Gln Arg Lys
565 570 575

Leu Gln Arg Gln Leu Ser Phe Ser Ser Ile Asn
580 585

<210> 66
<211> 243
<212> PRT
<213> Zea mays

<400> 66

Pro Arg Val Arg Ile Phe Leu Ala Trp Trp Leu Thr Arg Lys Ala Gln
1 5 10 15

Ile His Cys Leu Ala Val Gln Met Leu Leu Leu Arg Cys Leu Leu Met
 20 25 30
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
 50 55 60
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80
 Asn Glu Leu Gln Glu Glu Asn Ser Ser Leu Lys Ser Gln Ile Ser Glu
 85 90 95
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125
 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
 130 135 140
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
 145 150 155 160
 Ala Gly Gln Ala Gly Tyr Ala Pro Gln Pro Gln Pro Arg Glu Leu Gln
 165 170 175
 Leu Phe Pro Gly Ser Ser Ala Ser Ser Pro Glu Arg Glu Arg Ser
 180 185 190
 Ser Arg Leu Gly Ser Gly Gln Ala Thr Arg Pro Ser Leu Thr Asp Ser
 195 200 205
 Leu Pro Gly Gln Leu Cys Leu Ser Leu Leu Gln Pro Ser Gln Glu Ala
 210 215 220
 Ser Gly Gly Gly Gly Gly Val Met Ser Arg Ser Arg Glu Glu Arg
 225 230 235 240
 Arg Asp Gly

<210> 67
 <211> 423
 <212> PRT
 <213> Zea mays

<400> 67

Thr Arg Pro Ala Ile Arg Glu Leu Trp Arg Pro Asn Pro Ser Gln Leu
 1 5 10 15
 Ile Leu Leu Gln Thr Arg Gly Ile Gly Ala Leu His Lys Glu Leu Pro
 20 25 30

Lys Ala Cys Ala Leu Thr Gly Ser Ser Asp Pro Cys Tyr Ile Glu Ala
 35 40 45

Tyr His Leu Ala Asp Pro Thr Asp Gly Arg Ile Thr Leu His Leu Lys
 50 55 60

Ile Leu Asn Leu Thr Glu Leu Glu Leu Asn Arg Val Asp Ile Arg Val
 65 70 75 80

Gly Leu Ser Gly Ala Leu Tyr Tyr Met Asp Gly Phe Ser Arg Thr Val
 85 90 95

Arg His Leu Arg Asn Leu Val Ser Gln Asp Pro Val Gln Ser Ser Val
 100 105 110

Thr Val Gly Val Ser His Phe Glu Arg Cys Ser Leu Trp Val Gln Val
 115 120 125

Leu Tyr Tyr Pro Phe Tyr Gly Ser Ser Gly Ser Thr Asp Tyr Glu Gly
 130 135 140

Asp Tyr Ala Glu Glu Asp Ser Gln Met Met Arg Gln Lys Arg Ser His
 145 150 155 160

Arg Pro Glu Leu Gly Glu Pro Val Val Leu Arg Cys Gln Pro Tyr Lys
 165 170 175

Phe Pro Leu Ala Glu Leu Leu Pro Leu Glu Cys Ser Pro Val Glu
 180 185 190

Tyr Phe Arg Leu Trp Pro Ser Leu Pro Ala Met Val Glu Cys Thr Gly
 195 200 205

Thr Tyr Thr Tyr Glu Gly Ser Gly Phe Lys Ala Thr Ala Ala Gln Gln
 210 215 220

Tyr Asp Ser Ser Pro Phe Leu Ser Gly Leu Lys Ser Ile Ser Ser Lys
 225 230 235 240

Pro Phe His Gln Val Cys Ser His Phe Ile Arg Thr Val Ala Gly Phe
 245 250 255

Gln Leu Cys Tyr Ala Ala Lys Thr Trp Phe Gly Gly Phe Val Gly Met
 260 265 270

Met Ile Phe Gly Ala Ser Glu Val Ser Arg Asn Val Asp Leu Gly Asp
 275 280 285

Glu Thr Thr Thr Met Ile Cys Lys Phe Val Met Arg Ala Ser Asp Glu
 290 295 300

Ser Ile Thr Arg Glu Ile Lys Ser Asp Leu Gln Gly Trp Leu Asp Asp
 305 310 315 320

Ile Thr Asp Gly Ala Val Glu Tyr Met Pro Glu Asp Glu Val Lys Ser
 325 330 335

Val Ala Ala Glu Gln Leu Lys Ile Ser Met Glu Arg Ile Ala Leu Leu
340 345 350
Lys Ala Ala Arg Pro Lys Val Pro Pro Ala Lys Thr Asp Gln Glu Glu
355 360 365
Glu Glu Glu Arg Lys Gln Ser Glu Glu Leu Asp Gly Phe Gly Asn Pro
370 375 380
Lys Gly Pro Ser Thr Leu Ser Lys Leu Thr Ala Glu Glu Ala Glu His
385 390 395 400
Arg Ala Leu Gln Ala Ala Val Leu Gln Glu Trp His Gln Leu Cys Lys
405 410 415
Glu Arg Ala Met Lys Ala Gln
420

<210> 68
<211> 371
<212> PRT
<213> Zea mays

<400> 68

Pro Arg Val Arg Ala Ser Gly Ile Ser Gly Thr Ser Val Arg Leu Thr
1 5 10 15
Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala
20 25 30
Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Trp Val Pro
35 40 45
Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly
50 55 60
Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Leu Lys Glu Ile Leu
65 70 75 80
Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln
85 90 95
Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val
100 105 110
Ser Val His Arg Val Gln Leu Leu Gln Val Leu Ser Val Lys Arg
115 120 125
Phe His His Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu
130 135 140
Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg
145 150 155 160

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Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile
 165 170 175
 Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu
 180 185 190
 Ile Thr Trp Lys Lys Gly Leu Ser Pro Val His Gly Asp Ile Ala Thr
 195 200 205
 Ala Gln Arg Ala Arg Ile Glu Leu Cys Leu Glu Asn His Ser Gly Ser
 210 215 220
 Ala Ser Ser Asp Asn Thr Glu Asn Ser Ser Leu Ala Lys Ser Asn Ile
 225 230 235 240
 His His Asp Arg Ala His Ser Ser Val Glu Phe Ala Leu Thr Phe Val
 245 250 255
 Leu Asp His Ala Leu Ile Pro His Met Asn Val Ala Gly Gly Ala Ala
 260 265 270
 Trp Leu Pro Tyr Cys Val Ser Val Lys Leu Arg Tyr Ser Phe Gly Asp
 275 280 285
 Asn Asn His Ile Ala Phe Leu Ala Met Asn Gly Ser His Gly Gly Arg
 290 295 300
 Ala Cys Trp Leu Gln Phe Glu Glu Trp Glu Arg Cys Lys Gln Lys Val
 305 310 315 320
 Ser Arg Ala Val Glu Thr Val Asn Gly Ser Gly Val Ala Gly Glu Val
 325 330 335
 Gly Gln Gly Arg Leu Arg Met Val Ala Glu Met Ile Gln Lys Gln Leu
 340 345 350
 Gln Leu Cys Leu Gln Gln Leu Arg Asp Asp Pro Leu Ser Ala Gly Ser
 355 360 365
 Thr Ala Ser
 370

<210>	69
<211>	178
<212>	PRT

100 58

Thr	Arg	Pro	Asp	Asp	Pro	Cys	Pro	Tyr	Leu	Leu	Ser	Ile	Trp	Thr	Pro
1					5					10					15
Gly	Glu	Thr	Ala	Gln	Ser	Ile	Asp	Ala	Pro	Lys	Thr	Phe	Cys	Asp	Ser
						20			25					30	
Gly	Glu	Thr	Gly	Arg	Leu	Cys	Gly	Ser	Ser	Thr	Cys	Phe	Ser	Cys	Asn

35

40

45

Asn Ile Arg Glu Met Gln Ala Gln Lys Val Arg Gly Thr Leu Leu Ile
50 55 60

Pro Cys Arg Thr Ala Met Arg Gly Ser Phe Pro Leu Asn Gly Thr Tyr
65 70 75 80

Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn Pro
85 90 95

Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr Val
100 105 110

Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr Glu
115 120 125

Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly Phe
130 135 140

Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His Phe
145 150 155 160

Pro Val Ser Lys Val Val Arg Gly Lys Lys Pro Gly Ala Ala Arg Ala
165 170 175

Glu Glu

<210> 70
<211> 222
<212> PRT
<213> Zea mays

<400> 70

Thr Arg Pro Leu Arg Val Lys Lys Leu Gln Gln Glu Ala Ala Arg Cys
1 5 10 15

Leu Ser Leu His Lys Thr Met Glu Leu Gln Pro Glu Leu Ser Leu Gly
20 25 30

Pro Val Trp Pro Gly Phe Ala Ala Gly Asp Leu Ala Ala Lys Ser Ser
35 40 45

Ser Ser Glu Ser Asp Gly Thr Ser Arg Lys Lys Arg Lys His Tyr Thr
50 55 60

Ala Ser Trp Glu Glu Pro Gln Gln Pro Pro Ala Ser Leu Glu Leu Gln
65 70 75 80

Leu Asn Asp Pro Leu Pro Leu Asp Trp Glu Gln Cys Leu Asp Leu Gln
85 90 95

Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser Trp
100 105 110

Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser Thr
 115 120 125
 Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala
 130 135 140
 Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe Ser
 145 150 155 160
 Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu Val
 165 170 175
 Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val Gln
 180 185 190
 Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg Ile
 195 200 205
 Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His
 210 215 220

115 120 125
 130 135 140
 145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220

<210> 71
 <211> 303
 <212> PRT
 <213> Zea mays
 <400> 71
 Met Lys Leu Lys Asn Ser Ala Val Glu Thr Phe Lys Glu Asn Asn Met
 1 5 10 15
 Ile Phe Thr Ser Glu Gly Asn Leu His Ser Lys Lys Met Arg Glu Asp
 20 25 30
 Tyr Val Ala Ser Pro Asn Gln Pro Gly Ala Val Gln Thr Arg Cys Lys
 35 40 45
 Trp Ile Ile Gly Asp Val Thr Glu Val Phe Asp Arg Ser Thr Trp Lys
 50 55 60
 Leu Gly Lys Ile Leu Lys Met Leu Lys Asn Asn Tyr Phe Val Ile Arg
 65 70 75 80
 Leu Ala Asp Cys Ile Gln Leu Lys Glu Phe His Ile Ser Ser Leu Arg
 85 90 95
 Ile Pro Arg Gly Leu Glu Ala Pro Gln Ser Lys Pro Phe His Ala Ala
 100 105 110
 Asp Lys Ala Thr Gly Arg Gly Asn Arg Arg Pro Ala Asp Gly Ala Leu
 115 120 125
 Pro Gly Ala Arg Ala Ala Asp Gln Met Gly His Arg Ala Tyr Glu Leu
 130 135 140
 Gly Ser Ser Gly Lys Lys Arg Lys Ala Thr Ala Asp Ala Ser His His

100 90 80 70 60 50 40 30 20 10

145	150	155	160
Leu Gly Arg Ala Ala Ala Ala His Ser Arg Lys Val Ala Ala Ala Ser			
165	170	175	
Asn Pro Asn Gly Gly Ser Tyr Pro His Ser Ser Ser Gln Ala Ile Glu			
180	185	190	
Asp Ala Glu Cys Ser Val Ala Ser Cys Ser Val Asp Asp Leu Tyr Arg			
195	200	205	
Leu Gly Asn Gly Gly Asn Ala Lys Arg Arg Pro Ala Ala Ala Gly Cys			
210	215	220	
Leu Pro Asp Asp Ala Met Ser Ala Cys Pro Cys Thr Pro Gly Ala Arg			
225	230	235	240
Asp Gly Glu Asp Asp Ala Ala Gly Val His Gly Leu Glu Leu Glu			
245	250	255	
Ala Tyr Gly Ser Thr Met Arg Ala Leu Tyr Ala Ser Gly Pro Leu Thr			
260	265	270	
Trp Glu Gln Glu Ala Leu Leu Thr Asn Leu Arg Leu Ser Leu Asn Ile			
275	280	285	
Ser Asn Glu Glu His Leu Leu Gln Leu Arg Arg Leu Leu Ser Ser			
290	295	300	
<210> 72			
<211> 336			
<212> PRT			
<213> Zea mays			
<400> 72			
Pro Arg Val Arg Arg His Ala Arg His Glu His Asp Arg Ser Gly Asp			
1	5	10	15
Trp Ser His Arg Arg Arg Ala Gly Arg Gly Arg Ile Pro Pro Leu Arg			
20	25	30	
Leu Leu Ser Phe Asp Ser Leu Leu Pro Ala Ser Asn Pro Ser His His			
35	40	45	
Pro Phe Leu Pro Met Ala Ser Asp Ala Pro Ala Glu Gln Pro Ala Thr			
50	55	60	
Gln Gln Lys Pro Thr Arg Val Ser Leu Ser Tyr Glu Glu Ile Ser Lys			
65	70	75	80
Leu Phe Ser Leu Pro Ile Ala Glu Ala Ala Ser Ile Leu Gly Val Cys			
85	90	95	
Thr Ser Val Leu Lys Arg Ile Cys Arg Thr His Gly Ile Val Arg Trp			
100	105	110	

Pro Tyr Arg Lys Leu Val Ser Gly Lys Ala Gly Asp Asp Thr Lys Gly
 115 120 125
 Pro Asp Ser Asp Lys Ala Asn Glu Leu Leu Glu Val Ser Lys Ile Ala
 130 135 140
 Lys Gln Lys Ala Pro Ser Ala Ser Gly Pro Ser Val Val Ser Ser Ser
 145 150 155 160
 Thr Ser Gln Gly Ala Ala Lys Ser Gln Gln Gly Asn Ser Lys Ala Gly
 165 170 175
 Gln Phe Ser Val Ser Pro Pro Thr Gly Lys His Asn Ala Ser Leu Ser
 180 185 190
 Leu Thr His Ser Gln Ala Lys Ala Ile Pro Cys Tyr Met Asp Asp Phe
 195 200 205
 Lys Tyr Gly Phe Pro Ser Ser Gly Leu Ser Cys Glu Thr Met Lys Trp
 210 215 220
 Trp Gly Thr Ser Ser Asp Thr Asp Tyr Val Pro Thr Lys Asp Gly Ser
 225 230 235 240
 His Glu Pro His Glu Ser Thr Thr His Glu Pro Ser Lys Gly Met Thr
 245 250 255
 Asp Asp Asp Glu Leu Asp Trp Gly Ala Asp Glu Ala Glu Ala
 260 265 270
 Asp Gly Thr Val Thr Ala Glu Ala Ser Ala Gln Leu Cys Ser Leu Arg
 275 280 285
 Arg Lys Ala Val Asp Asp Gly Arg Lys Leu Leu Asn Gly His Asn Arg
 290 295 300
 Arg Gly Gln Glu Phe Ser Arg Leu Asn Lys Arg Gln Lys Thr Ala Leu
 305 310 315 320
 Ala Gln Val Phe Gly Ala Ser Leu Pro Glu Cys Cys Ile Thr Arg Val
 325 330 335

<210> 73
 <211> 196
 <212> PRT
 <213> Zea mays

<400> 73

Glu Ile Asp Pro Ile Thr Lys Glu Val Leu Ala Thr Pro Ile Ala Asp
 1 5 10 15
 Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu Asp
 20 25 30

Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln Val
 35 40 45
 Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr Leu
 50 55 60
 Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro Arg
 65 70 75 80
 Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro Glu
 85 90 95
 Asp Gly Gln Asp Phe Trp Pro Trp Phe Val Asp His Pro Glu Ile Pro
 100 105 110
 Leu Ile Val Thr Glu Gly Gly Lys Lys Ala Leu Ala Ala Ile Ser Gln
 115 120 125
 Gly Tyr Val Ala Leu Ser Leu Tyr Gly Cys Leu Cys Gly Asn Asp Gly
 130 135 140
 Leu Thr Ile Lys Pro Ser Leu Leu Pro Tyr Val Gln Gly Arg Glu Val
 145 150 155 160
 Ala Ile Ala Tyr Asp Gln Asp Ala Lys Gly Ser Lys Gly Arg Lys Ala
 165 170 175
 Val Phe Lys Gly Thr Lys Arg Leu Ala Arg Asn Leu Thr Tyr His Ala
 180 185 190
 Lys Ala Thr Val
 195
 <210> 74
 <211> 151
 <212> PRT
 <213> Zea mays
 <400> 74
 Pro Arg Val Arg Met Asn Leu Arg Arg Gln Thr Pro Leu Ala Ala Ile
 1 5 10 15
 His Ala Ala Leu Ala Ser Ala Asp Ala Met Val Ala Val His Gly Ala
 20 25 30
 Ala Val Thr His Phe Leu Phe Met Arg Pro Gly Ser Val Leu Leu Gln
 35 40 45
 Val Val Pro Val Gly Leu Asp Trp Ala Ala Asp Ala Phe Tyr Gly Lys
 50 55 60
 Pro Ala Gln Gln Leu Gly Leu Glu Tyr Leu Glu Tyr Lys Val Ala Pro
 65 70 75 80

Glu Glu Ser Ser Leu Ala Ala Glu Tyr Gly Leu Asp Ser Thr Val Leu
 85 90 95
 Arg Asn Pro Trp Val Ile Ser Ser Arg Gly Trp Trp Glu Met Lys Lys
 100 105 110
 Val Tyr Met Asp Arg Gln Asn Val Thr Val Asn Ile Lys Arg Phe Gly
 115 120 125
 Glu Leu Leu Arg Thr Ala Arg Thr His Leu Lys Asn Thr Thr Ala Cys
 130 135 140
 Ala Ala Ala Ala Ala Leu Arg
 145 150

<210> 75
 <211> 356
 <212> PRT
 <213> Zea mays

<400> 75

Thr Arg Pro Ile Glu Pro Gly Ser Arg Pro Glu Thr Ser Asp Tyr Pro
 1 5 10 15
 Gln Ser Ser Glu Arg Pro Leu Thr Ala Thr Ser Ser Phe Ser Ser Ala
 20 25 30

Ser Pro Phe Ser Glu Ser Ser Gln Leu Ala Ser Ser Ser Lys Gln Pro
 35 40 45

Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met Ser
 50 55 60

Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser Glu
 65 70 75 80

Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro Ser
 85 90 95

Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser Pro
 100 105 110

Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu Thr
 115 120 125

Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp Ser
 130 135 140

Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp Ile
 145 150 155 160

Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser Ala
 165 170 175

Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys Ser

	180	185	190
Pro Trp Thr Ser Asn Arg Ile Val Arg Asn Ala Asp Met Pro Val Ala			
195	200	205	
Ala Val Leu Pro Cys Arg His Val Phe His Ala Asp Cys Leu Glu Glu			
210	215	220	
Ser Thr Ala Lys Thr Glu Val His Glu Pro Pro Cys Pro Leu Cys Ala			
225	230	235	240
Arg Ala Thr Asp Asp Glu Gly His Val Ser Phe Ser Glu Pro Leu His			
245	250	255	
Val Ala Leu Arg Ser Ala Arg Arg Asn Leu Ser Leu Gly Thr Gly Ala			
260	265	270	
Gly Gly Asn Ser Gly Ile Ser Asp Pro Pro Arg Thr Asp Arg Gly Leu			
275	280	285	
Lys Arg Asn Asn Ser Ala Val Met Pro Arg Arg Ser Gly Gly Ala Leu			
290	295	300	
Phe Arg Asn Arg Phe Lys Lys Gln Phe Pro Phe Lys Ala Arg Ile Gly			
305	310	315	320
Lys Glu Leu Phe Gly Gly Arg Val Leu Asn Lys Val Gly Leu Ser Leu			
325	330	335	
Ser Ser Gly Gln His Asp Asp His Arg Gln Gln Ala Pro Lys His Asp			
340	345	350	
Arg Pro Met Lys			
355			
<210>	76		
<211>	940		
<212>	PRT		
<213>	Zea mays		
<400>	76		
Met Ala Met Ala Met Ala Arg Phe Leu Ser Trp Leu Phe Thr Cys Phe			
1	5	10	15
Ala Ala Leu Ala Val Leu Glu Ala Thr Val Pro Ala Arg Ser Trp Arg			
20	25	30	
Ala Pro Ser Pro Thr Pro Arg His Glu Ala Arg Arg Phe Glu Gln Lys			
35	40	45	
Thr Asp Arg Phe Trp Glu Tyr Gln Glu Gln Ser Asn Thr Trp Val Gln			
50	55	60	
Val Arg Ala Pro Phe Asp Leu Met Ser Cys Ile Asn Gly Thr Cys Thr			
65	70	75	80

Lys Val Gly Ser Ile Gly Arg Leu Ala Arg Glu Pro Gly Arg His Gly
 85 90 95

Leu Pro Pro Val Gln Ser Gln Glu Glu Glu Glu Asp Thr Arg Arg
 100 105 110

Val Gln Gly Asp Gly Ala Glu Glu Asp Pro Val Leu Pro Val Arg Arg
 115 120 125

Arg Ile Ser Leu Thr Arg Met Ser Glu Ser Ser Val Trp Val Thr Gly
 130 135 140

Gln Ser Gly Ser Ile Tyr Glu Arg Phe Trp Asn Gly Val Val Trp Val
 145 150 155 160

Ile Ala Pro His Glu Leu Pro Ala Ser Ala Gly Tyr Ala Thr Ala Thr
 165 170 175

Phe Ile Val Asn Thr Thr Ile Leu Ala Leu Ser Glu Ala Gly Thr Leu
 180 185 190

Tyr Gln Leu Gln Leu Asn Glu His Ala Gln Pro Ile Trp Thr Glu Met
 195 200 205

Ala Phe Asn Ser Ser Gln Gln Ser Ala Asn Leu Gly Leu Lys Thr Gln
 210 215 220

Ser Gln Ala Met Arg Ile Arg Asn Gly Ile Val Ser Asn Asp Gly Arg
 225 230 235 240

Lys Leu Phe Leu Ser Ile Met Asn Gly Ser Leu Leu Glu Val Thr Glu
 245 250 255

Ile Gln Pro Leu Arg Trp Asn Tyr His Gly Arg Pro Pro Gly Ala Asp
 260 265 270

Val Ser Tyr Ile Ser Asp Ala Gly Asn Leu Arg Pro Gly Thr Leu Phe
 275 280 285

Thr Val Ser Ser Thr Gly Asp Leu Tyr Glu Phe Asp Lys Glu Thr Lys
 290 295 300

Pro Ser Trp Lys Lys His Ile Trp Ser Glu Glu Leu Ala Lys Asn Ile
 305 310 315 320

Ser Leu Lys Ser Ser Ala Gly Phe Ala Leu His Gly Leu Ser Gly Ser
 325 330 335

Asn Ser Val Ser Leu Phe Leu Ile Ser Lys Asp Gly Leu Leu Val Glu
 340 345 350

Arg Arg Leu His Arg Arg Lys Trp Lys Trp Asp Lys His Gly Ala Pro
 355 360 365

Thr Gly Gln Arg Leu Ser Ser Ile Ala Glu Val Gln Lys Asp Glu Leu
 370 375 380

Asn Asp Ala Thr Ser Met Phe Leu Thr Thr Thr Gly Lys Val Tyr
 385 390 395 400
 Glu Tyr Gln Phe Pro Lys Tyr Thr Gly Gly Ala Gln Ser Asn Lys Ile
 405 410 415
 Arg Gly Gln Trp Ile Asn His Met Ser Pro Glu His Ala Lys Val Ala
 420 425 430
 Arg Asn Val Pro Gly Val His Val Gln Val Gly Arg Met Val Phe Pro
 435 440 445
 Leu Asp Asp Gly Arg Leu Gly Glu Leu His Phe Pro Gly Met Gly Gly
 450 455 460
 Thr Asp Phe Gly Pro Ser Ala Gln Ser Thr Ile Arg Arg Lys Leu Ser
 465 470 475 480
 Asn Lys Tyr Glu Trp Ser Ile Leu Asp Ala Pro Glu Thr Glu Gly Trp
 485 490 495
 Asn Ala Glu Tyr Cys Thr Glu Glu His Gly Pro Thr Asn Cys Ile Ser
 500 505 510
 Gly Ala Lys Asn Ile Ala Ala Asp Thr Glu Ser Asn Asp Leu Ser Asn
 515 520 525
 Asn Pro Pro Ser Arg Arg Lys Val Glu Glu Lys Gln His Tyr Leu
 530 535 540
 Asn Val Asn Arg Tyr Gln Gln Ser Asp Glu Thr Glu Ser Tyr Asn Phe
 545 550 555 560
 Leu Ser Arg Thr Ile Asp Leu Asn Phe His Met Arg Val Met His Ala
 565 570 575
 Asp Arg Ser Leu Phe Leu Ile Ala Asp Asn Gly Leu Thr Phe Glu Tyr
 580 585 590
 Leu Asn Ser Asn Gly Val Trp Leu Trp Leu Arg His Glu His Val Thr
 595 600 605
 Ala Met Lys Gly Thr Leu Gly Ser Tyr Asn Gly Ser Leu Tyr Leu Val
 610 615 620
 Asp Val His Gly Asn Leu His Ile Arg Glu Arg Asn Gly Asp Glu Leu
 625 630 635 640
 Leu Trp Ile Asn Cys Thr Ala Met Lys Lys Gly Arg Gln Val Ala Ser
 645 650 655
 Gly Ser Pro Trp Asp Gly Ile Pro Gly Leu Leu Arg Arg Val Thr Thr
 660 665 670
 Asp Asp Ala Leu Phe Phe Val Asn Lys Arg Gly Arg Leu Leu Gln Phe
 675 680 685

Thr Val Ala Leu Arg Lys Phe Lys Trp Lys Asp Cys His Ser Pro Pro
690 695 700

Asp Thr Lys Ile Ala Phe Ile Val Asp Gln Glu Val Phe Arg Arg Asn
705 710 715 720

Ile Ile Phe Val Val Gly Arg Asn Gly Arg Leu Tyr Gln Tyr Asn Arg
725 730 735

Ile Thr Glu Leu Trp His Arg His Tyr Gln Ser Pro His Leu Phe Leu
740 745 750

Ser Cys Ser Pro Gly Thr Ala Met Arg Pro Ser Pro Leu Ser Leu Ala
755 760 765

Gly Ser Leu Phe Met Val Ser Glu His Gly Gly Leu Val Glu Tyr His
770 775 780

Phe Ser Pro Gln Asp Gly Trp Glu Trp Val Glu His Gly Thr Pro His
785 790 795 800

Arg Gly Val Thr Leu Val Gly Ala Pro Gly Pro Cys Phe Asp Gly Ser
805 810 815

Gln Leu Phe Val Val Gly Ser Asp Gly His Val Tyr Arg Arg His Met
820 825 830

Glu Gly Arg Thr Trp Arg Trp Thr Ser His Gly His Pro Pro Ser Glu
835 840 845

Pro Ala Ala Val Asp Glu Gln Ser Cys Ala Thr Pro Asp Thr Gly Ala
850 855 860

Gly Ala His Tyr Ala Asp Gly Phe Arg Gly Ser Cys Asp Gly Lys Val
865 870 875 880

Ala Ala Val Arg Pro Val Pro Phe Ser Glu Asp Ala Val Val Phe Glu
885 890 895

Leu Arg Asp Gly Arg Leu Ala Glu Leu Arg Arg Pro Pro Ser Ala Asp
900 905 910

Gly Cys Gly Gly Trp Glu Trp Ala Arg Ile Ile Gly Thr Pro Ala Ser
915 920 925

Ala Cys Met Thr Ser Tyr Trp Thr Ala Val Ala Thr
930 935 940

<210> 77
<211> 556
<212> PRT
<213> Zea mays

<400> 77

His Ala Ser Gly Thr Met Glu Ile Gly Leu Arg Gly Pro Thr Asn Leu
1 5 10 15

Phe Gly His Pro Thr Asp Lys Gln Met Ile Glu Leu Asp Gln Ala Leu
20 25 30

Ser Gln Trp Asn Thr Asp Phe Asp Lys Val Pro Val Thr Lys Ile Ala
35 40 45

Phe Gly His Phe Pro Leu Ser Phe Ser Ala Leu Thr Glu Ser Gly Lys
50 55 60

Ser Ile Lys Asp Val Phe Leu Lys Gln Ser Leu Ala Ala Tyr Leu Cys
65 70 75 80

Gly His Leu His Thr Arg Phe Gly Lys Asn Leu Lys Arg Tyr Tyr His
85 90 95

Arg Ala Val Gln Glu Ser Ser Leu Ser Glu His Tyr Tyr Gln His Asn
100 105 110

Met His Gln Gly Asp Ala Phe Gln Gly Asn Lys Glu Asn Cys Ser Glu
115 120 125

Glu Ala Ser His Ile Glu Glu Phe Trp Glu Trp Glu Met Gly Asp Trp
130 135 140

Arg Lys Ser Arg Ser Met Arg Ile Leu Ala Ile Asp Asp Gly Tyr Val
145 150 155 160

Ser Tyr Thr Asp Ile Asp Phe Arg Leu Gly Ser Lys Ser Ile Ile Ile
165 170 175

Leu Pro Thr Phe Pro Leu Asp Ser Arg Phe Met Gln Arg Ala Ser Ala
180 185 190

Phe Arg Asp Phe Lys Cys His Val Met Gly Ala Ser Ser Phe Asp Thr
195 200 205

Val Arg Ala Leu Val Phe Ser Lys His Glu Ile Ile Ser Val Ser Val
210 215 220

Lys Ile Tyr Asp Ser Arg Pro Gly Thr Leu Glu Ile Val Phe Asp Ser
225 230 235 240

Glu Met Lys Arg Val Asp Ser Asn Glu Thr Arg Gly Asn Met Tyr Leu
245 250 255

Ile Pro Trp Asn Trp Arg Ala Phe Glu Asp Ser Ser Pro Ser Arg Tyr
260 265 270

Trp Leu Gln Ile Glu Val Met Asp Ile Thr Gly Asp Thr Ser Val Ser
275 280 285

Gln Leu Arg Pro Phe Ser Val Asn Gly Leu Pro Ala Arg Val Asn Trp
290 295 300

Thr Trp Lys Glu Phe Phe Val Ile Gly Ile Gln Trp Ala Ser Ile Tyr
305 310 315 320

His Pro Ala Leu Trp Cys Ala Phe Ser Leu Ile Phe Ser Leu Leu Leu
325 330 335

Val Pro Gln Val Leu Ala Val Val Phe Lys Asp Arg Phe Thr Tyr Lys
340 345 350

Ser Leu Cys Ala Tyr Gly Gly Gln Arg Thr Leu Leu Lys Ser Leu Val
355 360 365

Gly Gly Phe Ile Cys Cys Phe Val Glu Leu Ser Arg Leu Val Leu Val
370 375 380

Trp Leu Leu Leu Leu Tyr Ala Ile Tyr Leu Val Phe Ile Pro Trp
385 390 395 400

Leu Phe Gly His Pro Ile Thr Glu Asp Gly Ser Leu Thr Tyr Met Thr
405 410 415

His Lys Gly Trp Ile Leu Lys Gly Pro Ser Ser Ser Asn Glu Val Val
420 425 430

His Ala Gly Ile Pro Asp Val Met Val Ile Val Leu Pro His Leu Cys
435 440 445

Phe Val Leu Val Pro Thr Ile Val Ile Leu Ala Ala Met Ala Ala Glu
450 455 460

Arg Thr Ala Tyr Arg Glu His Tyr Leu Ser Arg Ser Gly Lys Lys Lys
465 470 475 480

Asp Asp Tyr Arg Lys Ser Arg Thr Gln Ile Glu His Glu Asn Phe Trp
485 490 495

Asn Gly Arg Trp Ile Ser Lys Phe Leu Cys Leu Leu Cys Val Val Val
500 505 510

Leu Cys Lys His Trp Lys Leu Cys Arg Ala Leu Val Lys Ala Tyr Ala
515 520 525

Met Asn Pro Leu Leu His Ala Pro Val Leu Phe Phe Phe Val Pro Leu
530 535 540

Leu Met Val Phe Ala Ile Tyr Lys Thr Arg Ser Ile
545 550 555

<210> 78
<211> 167
<212> PRT
<213> Zea mays

<400> 78

Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp Phe

1	5	10	15
Ser Glu Gly Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu Leu			
20	25	30	
Arg Ala Gly Asp His Leu Leu Leu His Val Ile Lys Glu Pro Asp			
35	40	45	
Tyr Glu Gln Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro Leu			
50	55	60	
Ile Pro Leu Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr Gly			
65	70	75	80
Ala Lys Pro Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala Thr			
85	90	95	
Gln Lys Asp Ile Val Val Val Lys Val Leu Trp Gly Asp Pro Arg			
100	105	110	
Glu Lys Leu Cys Gln Val Ile His Asp Thr Pro Leu Ser Cys Leu Val			
115	120	125	
Ile Gly Ser Arg Gly Leu Gly Lys Leu Lys Arg Val Leu Leu Gly Ser			
130	135	140	
Val Ser Asp Tyr Val Val Asn Asn Ala Thr Cys Pro Val Thr Val Val			
145	150	155	160
Lys Ser Thr Ser Thr Glu Gly			
165			
<210> 79			
<211> 81			
<212> PRT			
<213> Zea mays			
<400> 79			
Gln Thr Arg Ala Tyr Leu Ser Asn Val Cys Val Ala Lys Glu Leu Gln			
1	5	10	15
Lys Lys Gly Leu Gly Tyr Thr Leu Val Asp Lys Ser Lys Lys Leu Ala			
20	25	30	
Leu Glu Trp Gly Ile Thr Asp Leu Tyr Val His Val Ala Ile Asn Asn			
35	40	45	
Val Ala Gly Gln Lys Leu Tyr Lys Lys Cys Gly Phe Val Tyr Glu Gly			
50	55	60	
Glu Glu Pro Ala Trp Lys Gly Arg Phe Leu Gly Arg Pro Arg Arg Leu			
65	70	75	80
Leu			

<210> 80
<211> 291
<212> PRT
<213> Zea mays

<400> 80

Met Asn Gly Gly Leu Pro Gly Phe His Asn Ala Pro Ala Ser Lys Ala
1 5 10 15

Val Val Val Ala Ala Gly Leu Phe Ser Val Ala Phe Gly Phe Arg Gly
20 25 30

His Ser Leu Asn Leu Gly Leu Ala Tyr Gln Ser Val Tyr Glu Lys Leu
35 40 45

Ser Val Trp Arg Leu Ile Thr Ser Phe Phe Ala Phe Ser Ser Thr Pro
50 55 60

Glu Leu Ile Phe Gly Ala Val Leu Leu Tyr Tyr Phe Arg Val Phe Glu
65 70 75 80

Arg Gln Ile Gly Ser Asn Lys Tyr Ala Val Phe Ile Ile Phe Ser Thr
85 90 95

Met Val Ser Val Leu Leu Gln Ile Leu Ala Leu Gly Tyr Met Lys Asp
100 105 110

Pro Ser Leu Asn Pro Leu Thr Ser Gly Pro Tyr Gly Leu Ile Phe Ala
115 120 125

Ser Tyr Val Pro Phe Phe Asp Ile Pro Ile Ser Met Lys Phe Arg
130 135 140

Ile Phe Gly Leu Ser Phe Ser Asp Lys Ser Phe Val Tyr Leu Ala Gly
145 150 155 160

Leu Gln Leu Leu Phe Ser Ser Gly Arg Arg Ser Ile Val Pro Gly Leu
165 170 175

Ser Gly Ile Leu Ala Gly Leu Leu Tyr Arg Leu Asn Thr Phe Gly Val
180 185 190

Arg Arg Leu Lys Phe Pro Glu Phe Ala Thr Ser Leu Phe Ser Gln Leu
195 200 205

Ser Leu Pro Phe Ser Ser Asn Pro Tyr Gln Gly Leu Pro Ile Thr Glu
210 215 220

Asn Asp Gly Ser Ile Pro Ser His Gln Ala Arg Gln Ile Glu Asp Ala
225 230 235 240

Arg Thr Ala Thr Gln Asp Pro Thr Glu Ser Ser Ile Ala Ala Leu Val
245 250 255

Ser Met Gly Phe Asp Arg Ser Ala Ala Ile Gln Ala Leu Ala Leu Thr

260

265

270

Asn Tyr Asp Val Asn Leu Ala Ser Asn Ile Leu Leu Glu Ala Gln Ala
275 280 285

Leu Gln Gln
290

<210> 81
<211> 294
<212> PRT
<213> Glycine max

<400> 81

Met Asp Ser Ser Cys Val Pro Asn Gly Asp Val Ser Gly Phe Lys Asp
1 5 10 15

Lys Glu Pro Met Val Asp Pro Phe Leu Val Glu Ala Leu Gln Asn Pro
20 25 30

Arg His Arg Val Thr Ile Leu Arg Met Glu Leu Asp Ile Gln Arg Phe
35 40 45

Leu Asn Asn Ala Asp Gln Gln His Phe Glu Phe Gln His Phe Pro Ser
50 55 60

Ser Tyr Leu Arg Leu Ala Ala His Arg Val Ala Gln His Tyr Gly Met
65 70 75 80

Gln Thr Met Val Gln Asp Asn Gly Phe Asn Gly Gln Gly Thr Arg Ile
85 90 95

Met Val Arg Lys Ile Ala Glu Ser Arg Tyr Pro Val Val Cys Leu Ser
100 105 110

Glu Ile Pro Ala Lys Gln Leu Glu Asp Asp Lys Pro Glu Gln Ile Lys
115 120 125

Ile Ala Ile Arg Pro Arg Gln Asn Lys Asn Ser Leu Asn Glu Ala Gly
130 135 140

Arg Lys Ser Asn Pro Leu Arg Ser Val Glu Glu Arg Lys Glu Glu Tyr
145 150 155 160

Asp Arg Ala Arg Ala Arg Ile Phe Ser Ser Ser Arg Ser Cys Asp Ser
165 170 175

Asp Asp Thr Leu Ser Gln Thr Phe Thr Asp Glu Lys Asn Ser Leu Ile
180 185 190

Ile Lys Asp Glu Asn Glu Thr Ser Lys Thr Pro Val Val Asp Ser Glu
195 200 205

Gln Cys Thr Val Gly Arg Asp Ile Ser Ser Thr Arg Val Ala Ile Leu
210 215 220

Arg Asp Arg Glu Lys Asp Arg Ser Asp Pro Asp Tyr Asp Arg Asn Tyr
225 230 235 240

Gly Arg Tyr Ala Arg Ser Ile Pro Ile Ser Ser Leu Asn Leu Met Pro
245 250 255

Phe Asn Leu Gln Gln Val Gln Pro Pro Phe Val Gln Tyr Asp Asn Ala
260 265 270

Leu Ile Arg Ser Val Arg Tyr His Lys Ile Lys Leu His Leu Ala Met
275 280 285

Asp Leu Leu Gln Ala Leu
290

<210> 82
<211> 238

<212> PRT

<213> Zea mays

<400> 82

Ala Arg Gly Ser Ala His Tyr Arg Thr Phe Trp Val Thr Asp Ser His
1 5 10 15

Tyr Leu Thr Ala Thr Gly Pro Ala Ile Ala Ile Phe Thr Asn Pro Thr
20 25 30

Lys Gln Gly Tyr Asp Asp Gly Leu Gly Glu Lys Ile Ile Gly Thr Phe
35 40 45

Gly Asn Cys Ala Gly Gly Thr Thr Pro Trp Gly Thr Val Leu Ser Ala
50 55 60

Glu Glu Asn Phe Gln Ser Gln Val Pro Glu Ala Val Tyr Ala Asp Gly
65 70 75 80

Ser Ala Val Asp Pro Ala Gln Cys Pro Leu Lys Ile Ser Thr Asn Gly
85 90 95

Leu Ser Gly Gln Gly Asn Val Phe Gly Leu Ala Gly Asn Lys Tyr Gly
100 105 110

Trp Met Val Glu Ile Asp Pro Ala Asn Ala Asn Asp Tyr Gly Val Lys
115 120 125

His Thr Ala Leu Gly Arg Phe Arg His Glu Ala Val Ala Val Arg Ala
130 135 140

Thr Ala Asn Gln Pro Leu Ala Val Tyr Ser Gly Cys Asp Arg Thr Ser
145 150 155 160

Gly His Leu Tyr Lys Phe Val Ser Ala Asp Thr Val Lys Ser Pro Thr
165 170 175

Asp Lys Gly Asn Ser Arg Leu Phe Thr Ala Gly Thr Leu Tyr Gly Ala
180 185 190

Lys Phe Asn Ala Asp Gly Thr Gly Glu Trp Ile Ala Leu Thr Pro Asp
195 200 205

Thr Val Val Asn Pro Val Arg Pro Ser Asp Ile Ala Val Asp Ser Ser
210 215 220

Thr Thr Gly Ile Val Tyr Leu Pro His Pro Asp Arg Asn Gln
225 230 235

<210> 83
<211> 322
<212> PRT
<213> Zea mays

<400> 83

Pro Arg Val Arg Val Pro Leu His Arg Met Ser Asp Pro Ala Ala Gly
1 5 10 15

Gly Ala Met Val Pro Ala Ala Gly Arg Gly Ile Ala Trp Ala Asn Gly
20 25 30

Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro
35 40 45

Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu
50 55 60

Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly
65 70 75 80

Asp Ser Ser Tyr Gly Trp Phe Asp Pro Ser Glu Leu Val Pro Phe Glu
85 90 95

Asp His Phe Thr Glu Lys Ala Ala Gln Gly Gly Ser Ser Arg Ser Ser
100 105 110

Phe Ala Ala Ala Val Ala Glu Ala Val Asp Glu Val Ala Arg Arg Ser
115 120 125

Ala Leu Ala Leu Leu Cys Pro Cys Asp Ile Pro Asp Ala Phe Arg Pro
130 135 140

His Pro Ser Asp Gly Asn Phe Phe Leu Val Asp Val Pro Ala Phe Asp
145 150 155 160

Thr Asp Ala Asp Tyr Gln Leu Asp Gln Ile Arg Ala Ala Arg Gln Arg
165 170 175

Phe Val Pro Arg Lys Ala Leu Asn Tyr Leu Leu Asp Ala Ala Val Thr
180 185 190

Gln Arg Asp Ala Ala Glu Lys Ala Ala Arg Thr Val Pro Gly Met Glu

195	200	205
Met Ala Ala Leu Phe Leu Ala Tyr Arg Arg Ala Val Phe Ser Pro Ile		
210	215	220
Asp Asn Thr Tyr Ala Gln Ala Phe Gly Val Asp Pro Glu Leu Ala Leu		
225	230	235
Ala Ala Glu Gln Lys Ala Ala Ala Glu Arg Ala Gln Arg Gly Ile Asn		
245	250	255
Asn Thr His Met Leu Asn Ser Ser Cys Thr Val Val Leu Val Thr Val		
260	265	270
Tyr Leu Lys Leu Met Gly Lys Gln Cys Ser Tyr Cys Phe Tyr Arg Ser		
275	280	285
Ser Asn Asn Tyr Phe Asp Val Asn Asn Gly Val Asp Leu Ile Gln Ile		
290	295	300
Val Ser Ile Ser Leu Leu Phe Asn Cys Trp Leu His Phe Phe Tyr Gln		
305	310	315
Arg Glu		
<210> 84		
<211> 187		
<212> PRT		
<213> Zea mays		
<400> 84		
His Ala Ser Glu Ala Ser Ala Ala His Leu Thr Asn Tyr Gly Asn Met		
1 5 10 15		
Val Ser Ala Gln Glu Arg Ser Ile Gln His Thr Ala Tyr Asn Pro Glu		
20 25 30		
Val Thr Leu Asn Leu Pro Pro Pro Pro Leu Pro Thr Ile Pro His		
35 40 45		
Ser Ser Ala Thr Leu Gln Ser Gln Gly Gly His Ser Leu Pro Ser Gln		
50 55 60		
Thr Asn Gln Gln Leu Tyr Gln Pro Glu Gln Tyr Tyr Val Pro Gln Asn		
65 70 75 80		
Asn Tyr Gly Pro Leu Val Pro Val Ser His Ser Asn Leu Gln Ile Ser		
85 90 95		
Asn Thr Asn Asn Pro Thr Leu Thr Ile Pro Gln Val Asn Pro Gly Pro		
100 105 110		
Pro Thr Asn Asn Gln Ile Gly Asn Leu Ala Gln Pro Gln His Ser Met		
115 120 125		

Pro Leu His Val Asp Arg Ala Ser Gln Asp Phe Ser Ser Gln Gly Gln
 130 135 140
 Gln Gln Asn Arg Gly Pro Gly Ala Ala Gln Ala Pro Glu Glu Asp Lys
 145 150 155 160
 Ser Lys Lys Tyr Gln Ala Thr Leu Gln Leu Ala Gln Asn Leu Leu Leu
 165 170 175
 Gln Leu Gln Gln Arg Gly Ser Gly Asn Gln Ser
 180 185

 <210> 85
 <211> 258
 <212> PRT
 <213> Zea mays

 <400> 85

 His Ala Ser Asp Pro Thr Glu Phe Ile Leu Glu Thr Leu Glu Gln Ser
 1 5 10 15
 Asp Pro Gln Ser Leu Ile Gln Tyr Leu Ala Tyr Gln Asp Leu Cys Val
 20 25 30
 Val Ser Glu Cys Asn Leu Glu Pro Trp Arg Arg Ala Ala Phe Phe Glu
 35 40 45
 Glu Ser Gly Glu Thr Tyr Arg Arg Ile Val Thr Ala Cys Leu Lys Pro
 50 55 60
 Leu Glu Glu Phe Thr Ser Lys Ile Ala Glu Ala Leu Glu Gly Phe Ser
 65 70 75 80
 Ser Asp Gln Pro Glu Leu Met Leu Gln Gln Ser Arg Leu Phe Ser Ala
 85 90 95
 Phe Asp Asp Ser Gln Ile Cys Thr Trp Cys Ala Arg Thr Leu Ala Gly
 100 105 110
 Leu Thr Ala Arg Ser Arg Lys Glu Asp Arg Tyr Gly Val Ala Gln Leu
 115 120 125
 Thr Gly Cys Asn Ala Ala Val Met Thr Thr Leu Leu Ser Ala Leu Val
 130 135 140
 Ala Ile Glu Thr Cys Leu Gly Lys Lys Thr Asn Pro Gln Pro Val Arg
 145 150 155 160
 Ser Leu Gly Pro Glu Asn Ile Arg Trp Thr Asn Leu Ser Thr Gly Arg
 165 170 175
 Lys Gly Asn Gly Val Ala Ile Ala Ser Thr Gln Lys Ser Gly Leu His
 180 185 190
 Lys Lys Ala Tyr Ile Met Ala Asp Val Leu Arg Thr Ser Val Tyr His

195

200

205

Ile Leu Ser Ala Phe Ile Asp Asp Leu Gln Ala Asn Ala Lys Pro Ser
210 215 220

Ser Leu Glu Lys Asn Trp Ile Ser Glu Gly Arg Lys Pro Val Tyr Gly
225 230 235 240

Ser Gln Ala Val Leu Val Gln Lys Leu Ile Leu Phe Ile Glu Tyr Arg
245 250 255

Ala Val

<210> 86
<211> 288
<212> PRT
<213> Zea mays

<400> 86

Gly Leu Glu Glu Glu Asp Gly Glu Glu Ala Ala Pro Ala Ser Pro Trp
1 5 10 15

Ala Glu Ala Asp Ala Gln Ala Gly Gly Ala Glu Ala Gln Thr Glu Val
20 25 30

Leu Gly Ala Gly Glu Pro Asp Leu Glu Ser Lys Ile Val Ala Ile Arg
35 40 45

Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu
50 55 60

Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu
65 70 75 80

Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala
85 90 95

Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile
100 105 110

Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala
115 120 125

Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser
130 135 140

His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln
145 150 155 160

Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser
165 170 175

Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn
180 185 190

Ser Arg Gln Met Asn Asn Asn His His Ser Thr Thr Ile Thr Thr Ser
 195 200 205

Thr Ser Ser Ala Pro Ala Phe Ser Val Gln Lys Val Thr Arg Glu Gln
 210 215 220

Lys Gln Ser Leu Val Asp Leu Asp Arg Leu Asp Ser Ala Arg Lys Arg
 225 230 235 240

Leu Gln Glu Asn Tyr Gln Glu Ala Gln Asn Ala Lys Lys Gln Arg Thr
 245 250 255

Ile Gln Val Met Asp Ile Asn Asp Ile Pro Lys Pro Lys Ser Arg Asn
 260 265 270

Ala Phe Ile Arg Lys Ser Gly Ser Gly Gly Leu Pro Ala Arg His Arg
 275 280 285